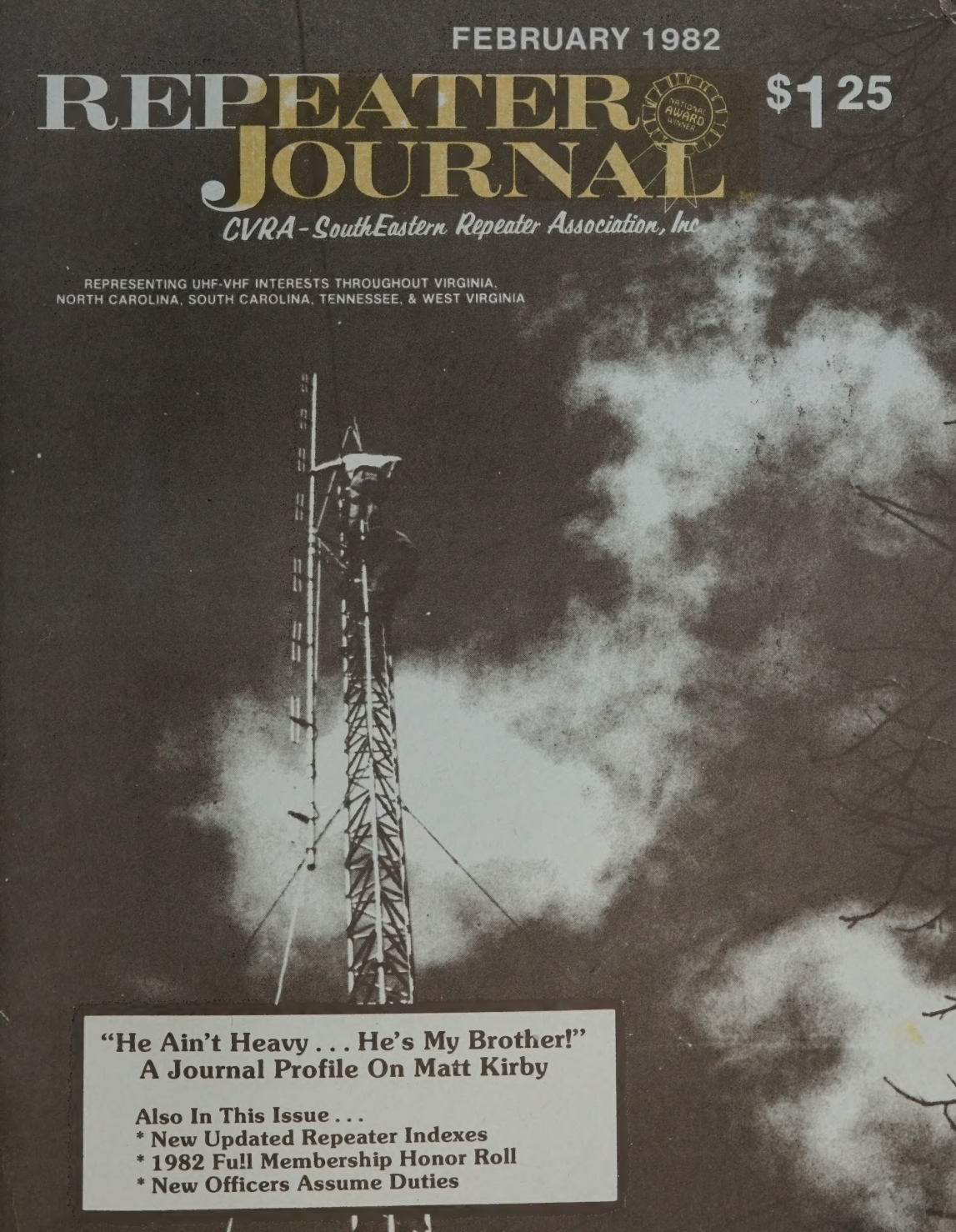
FEBRUARY 1982

REPEATER JOURNAL

$1.25

CVRA - SouthEastern Repeater Association, Inc.

REPRESENTING UHF-VHF INTERESTS THROUGHOUT VIRGINIA, NORTH CAROLINA, SOUTH CAROLINA, TENNESSEE, & WEST VIRGINIA



"He Ain't Heavy . . . He's My Brother!"
A Journal Profile On Matt Kirby

Also In This Issue . . .
* New Updated Repeater Indexes
* 1982 Full Membership Honor Roll
* New Officers Assume Duties

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REPEATER JOURNAL

CVRA-SouthEastern Repeater Association, Inc.

FEBRUARY - APRIL 1982 "IN OUR 11th YEAR" VOLUME 11, NO. 1

ORGANIZED 1971

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ON THE COVER

The Homebrew 8 db. bay array goes on the 13-73 Knoxville repeater tower. Inset photo-Matt Kirby, WB4IOB.

REPEATER JOURNAL EDITORIAL COMMENT

"WHERE'S ALL THE GOOD AUDIO?"

Did you ever want to cuss that guy out on 20-meters who's running his kilowatt with a speech processor and is taking up about thirty kilohertz of valuable band space? We all know that there is a point of diminishing returns when it comes to modulation of any transmitter, whether it be a.m., f.m. or s.s.b.

Like 20-meters, some area f.m. repeaters are having problems. In my travels through Virginia and North Carolina I've found some repeaters who seem to be following the same principle as those operators on 20-meters. It goes like this: When the band gets full, turn up the audio. Whether this is the reasoning behind some repeater owners turning up the deviation, I don't know. However, the end result is the same. I've recently encountered some repeaters that were deviating 7 . . . 8 . . . 9 kilohertz. I watched the scope deviation of one repeater a few months ago that was peaking 9 khz. The instrument I was looking at was $5,000-plus Cushman analyzer.

If most ham rigs are manufactured with 5 khz deviation in mind why feed it 7 or 8 khz? The repeater audio sounds terrible and in some cases (If your squelch is tight) the repeater signal chops right out of the bandpass of your

Continued On Page 45

And You Thought YOU were Cold!!!

I thought I might share with you my trip to Richmond, Virginia to the FrostFest at the State Fairgrounds. You remember that weekend . . . it was cold, cold . . . . cold!!

As I look back, I wonder what happened. How can one person mess up so much and make his life so miserable in one weekend.

It all started Saturday afternoon, my wife, Gerry and I left Colfax in our old Ford Van, headed for Richmond at about 3:00 p.m. We talked and had a good time, stopping leisurely for coffee, snacks, etc.

At dusk we noticed the van getting a little cooler inside, but we surged onward. At South Hill, Va. we stopped at the Holiday Inn for dinner and as we drove up, we saw millions of tiny snowflakes in the headlight beam . . . we looked up . . . not a cloud in the sky except one lonely one on the horizon to the North. Well, we went in, had a nice meal, got the desk clerk to call ahead for us to get reservations for the Holiday Inn Abbey just off I-64 in Richmond. We resumed our journey and had an uneventful trip the rest of the way. At 8:00 p.m. we arrived the the Junction of I-95 and I-64 and looked for the Holiday Inn. It wasn't where it was supposed to be. By this time we were quite a ways down I-64E so we decided to go ahead to the Fairgrounds and unload our "ghunque".

Continued On Page 24

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REPEATER JOURNAL

FEBRUARY - APRIL 1982

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SPECIAL NOTICE: Associate Membership deadlines are now on the 15th of the month preceding months of publication (Jan. 15, Apr. 15, July 15 and Oct. 15.) Persons joining or renewing must have their application into the Greensboro P.O. Box by those deadlines to receive the next upcoming Journal. Memberships received after deadline will not receive a REPEATER JOURNAL until the next issue comes out some 3 months later. Memberships received at hamfests will receive a current REPEATER JOURNAL as long as supplies are available.

The CVRA REPEATER JOURNAL is published quarterly, during the months of February, May, August and November of each year and mailed free to members of CVRA-Southeastern Repeater Association, Inc. Permission is granted for use of CVRA REPEATER JOURNAL material, providing credit is given. The JOURNAL will swap newsletters with other Repeater Councils and News organizations on request. The CVRA REPEATER JOURNAL press run is 3,800 copies with circulation in excess of 3,500 copies and is entered as Third Class Mail at the Post Office in Greensboro, N.C. The Full and Associate Membership mailing addresss is CVRA-SERA, P.O. Box 5655, Greensboro, N.C. 27403. All news and Newsletter exchanges should be mailed to the Editor and Publisher: Wayne C. Williams, K4MOB, 600 Lakedale Road, Colfax, N.C. 27235.

DIRECTORS MEETING HELD JANUARY 24 AT ASHEVILLE

Lane Tarleton, KC4CD, outgoing CVRA-SERA President said it best, "The CVRA-Southeastern Repeater Association is one of the most coordinated, well represented organizations for Amateur Radio in the United States."

Tarleton on hand at the Annual Directors meeting in Asheville, N.C., challenged the new incoming officers to keep the organization moving forward, to serve the VHF-UHF interests in our five state membership.

Incoming President Don Morris, AB4J of Charlotte, N.C. said he accepts the challenge and will do all he can to maintain the high ideals of CVRA-SERA. Installed as new officers along with Morris were: Carter Cogle, K4ARO of Petersburg, Va., Vice President; Maxine Barrett, N4ECA, Lookout Mt., Tn., Secretary; and Ray Adams, N4BAQ, Knoxville, Tn., Treasurer.

President Morris also reappointed Wayne C. Williams, K4MOB as Publisher and Editor of the Repeater Journal; Larry McLaurin, WB4VJE, Associate Membership Chairman; and Gerry Butts, Full Membership Chairman.

The officials present went on record in expressing their appreciation to Lindsay Cleveland, W4IZI of Wheaton, Ill. for his unselfish time in maintaining the computer for the organization. President Morris said, even though Lindsay, who has held the job of keeping up with the membership and repeater indexes for years, and now lives out of the area, continues to faithfully stay an important and vital part of our organization. Lindsay spends many hours keeping changes and additions to our computer printout on membership and repeaters.

"We are very fortunate to have such a man as Lindsay with us," Morris said, "I wish he could be with us today so we could shake his hand and say thank you in person."

The Directors in other business discussed repeater frequencies, potential problems and other items associated with coordination.

Sam, WB4HAP and Mike, KC4AO, Tennessee and Virginia Directors introduced to the group new forms to aid in coordination. Each Director and Vice-Director were given supplies of forms to use. The forms included: Applications for Frequency Coordination, Letter forms to other repeaters being affected by certain frequency allocations, and Frequency coordination forms.

Budget proposals were presented Wayne, K4MOB for Journal Publication, Larry WB4VJE and Gerry Butts for Associate and Full Membership. directors also submitted estimates of costs for 1982 for their respective Districts.

Wayne, K4MOB told the group that Journal publication would cost more in 1982 since Golden Triangle had shut down in Greensboro and old contract prices were no longer in effect. New printing quotes reflected inflation and cost increases.

It was generally agreed that there was no need for Membership or Advertising price increases during 1982, even though costs have risen drastically.

At the close of the meeting, President Morris challenged each Director to make his District the best, and work hard toward getting the word of our organization to every city and town in every district.

N.C. OUTSTANDING AMATEUR

Ken Woodard, WA4BVW, owner of the Mt. Pisgah 16-76 repeater, Club member, and North Carolina Director for CVRA-SERA was presented with the North Carolina Outstanding Amateur award by the Western Carolina ARS of Asheville. The annual award, a handsome plaque is a W4DPF Memorial Award is presented to some outstanding club member each year.

WORLD'S FAIR SPECIAL SECTION PLANNED FOR MAY JOURNAL

The World's Fair comes to CVRA-SERA territory for the first time, beginning May 1 in Knoxville, Tennessee.

The Radio Amateur Club of Knoxville (RACK) will be very active during the May-October period, providing vital communciations for the massive event. Two special World's Fair repeaters are being placed in service.

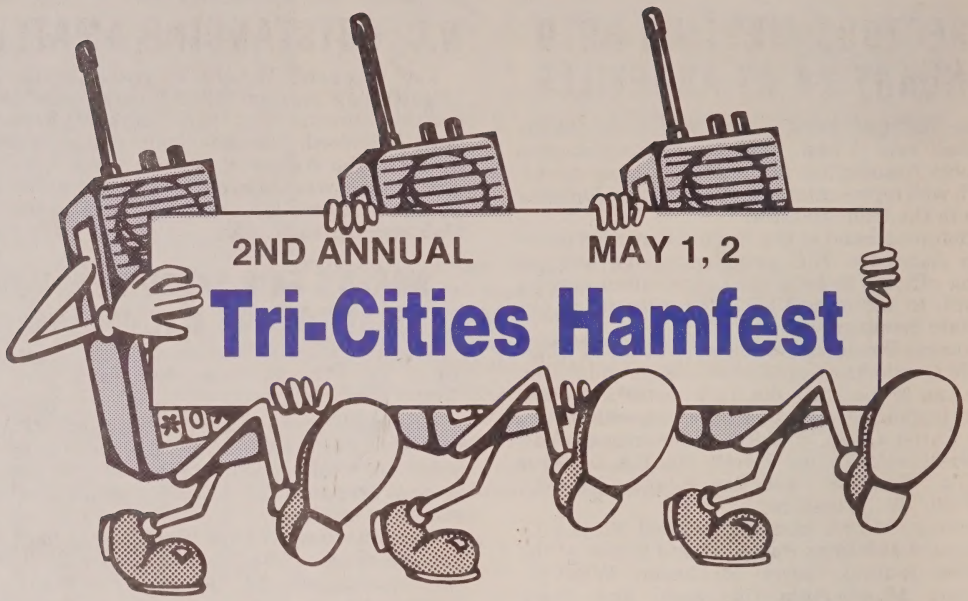
In conjunction with the World's Fair, the Knoxville Hamfest is also scheduled on May 22-23. With the Hamfest will be the Delta Division ARRL Convention.

Sam Kirby, WB4HAP Tennessee Director, and members of RACK plan to provide the Journal with many pictures and stories about the forthcoming World's Fair, and the part Amateur Radio will play in it. Look for this special section in the May issue. Additional copies of the Journal will probably be printed to be available at a modest charge to non-members.

CHECK YOUR MAILING LABEL

If you are not sure when your membership expires for CVRA-SERA, check your mailing label, your expiration date is printed on it.

While checking, be sure to check your name, address and call. If there is a mistake or change that should be made, send your corrections to CVRA-SERA Membership, P.O. Box 5655, Greensboro, N.C. 27403.



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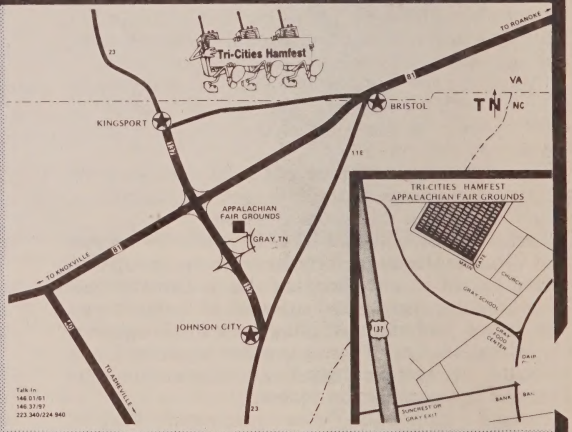

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REPEATER JOURNAL HONOR ROLL

HOW THE DISTRICTS DID

It was a battle royal between districts, even though as expected, North Carolina ran away from all the rest in renewal numbers. But second, third and fourth was too tight for comfort. South Carolina copped second place, just two memberships over Tennessee who placed third, and won over Virginia by just one membership.

Records crashed again this year as faithful repeater members got their memberships in prior to December 31 to qualify for this Repeater Journal Honor Roll. By year end, we had received 144 Full Memberships representing 185 repeaters. This compares with 102 memberships representing 122 repeaters in 1981. Previously CVRA-SERA members rejoined with memberships totaling 85 in 1980, 67 in 1979 and 28 in 1978. (All tabulated to qualify for Honor Roll, and were in by December 31.)

Again this year, North Carolina copped first place with 53 memberships representing 61 repeaters. South Carolina jumped from 4th in 1980 and 3rd in 1981 to 2nd in 1982 with 26 memberships for 30 repeaters. Tennessee regained 3rd place after dropping to 5th last year by coming in with 24 memberships for 35 repeaters.

Nipping at the heels of Tennessee and South Carolina was Virginia (our smallest District in numbers of repeaters available to join) placed 5th with 14 memberships for 15 repeaters.

Looking at the figures another way, by years end, North Carolina still maintained 1st place with 61 repeaters jointed, Virginia was 2nd with 39, Tennessee 3rd with 35, South Carolina 4th with 30 and West Virginia 5th with 15. (Repeater numbers exceed membership numbers, because some memberships operate more than one repeater).

Here is the list of the Repeater Honor Roll repeaters. They are listed by State, in order as the mail was opened instead of alphabetical order. The two numbers beside the State name indicates number of memberships and number of repeaters respectively.

Repeater owners . . . Full Members of CVRA-SERA, we tip our hat to you. We are proud that so many of you have faith in our organization to be a part of it. Welcome back . . . friends!!! To those of you who are with us for the first time . . . A warm welcome, we're glad to have you!

WATCH FOR US!

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-HONOR ROLL-

By State-NOT in Alphabetical Order

These repeaters were renewed prior to Dec. 31, 1981.

TENNESSEE (24-35)

Oak Ridge, K4EAJ (3)
Kingsport/Bays Mt., W4TRC
Gallatin, WD4KWP
Memphis, WR4AZK (4)
Nashville, WR4AFA
Knoxville, W4BBB
Greeneville, WA4LYF
Knoxville, WB4GBI
Gatlinburg/Cove Mt., WA4KJH
Chattanooga, WA4ZOK (3)
Johnson City, WB4IKB
Sparta, W4BSA
Greeneville, WB4NKM
Johnson City, KE4FH
McMinnvl/Short Mt., W4KKO
Knoxville, WA4KAV
Bristl/Holstn Mt., WR4ADO (2)
LaFollette, W4TZG
Knoxville, WB4IOB (2)
Knoxville, KB4NK
Knoxville, WA4YON (2)
Knoxville, WA4TEM
Oak Ridge, W4SKH (2)
Short Mt.. W4YXA

NORTH CAROLINA (53-61)

Rockingham, WA4ULA
Greenville, W4AMC
Asheville, NC4N
Laurinburg, K4QWK
Union Cross, WA4RBW
Mt. Pisgah/Ashvl, WA4BVW (2)
Raleigh, N4BEA
Jacksonville, WD4FVO
Charlotte, WR4AEU
Charlotte, W4BFB
Eden/Stnvlle, WA4QBG
Salisbury, W4EXU (3)
Greensboro, WR4AOD
Chryvl, Bakers Mt., WB4UDS
Lexington, K4IZM
High Point, K4AZA (4)
Carthage, W4NIW
Ahoskie, WB4YNF
Ahoskie, WA4ZGQ
Raleigh, N4BXF
Brevard, N4DJB
Waynesville, N4SM
Newport, K4GRW
Asheville, WA4QCO
Greensboro, K4SNI
Locust, WA4ZIA
Monroe, K4JCK
Wstfld/Sauratn Mt., W4RXG
Raleigh, K4BWC
Goldsboro, K4CYP
Mt. Airy, WA4ZAS
Wstfld/Sauratn Mt., WB4KQN
Burgaw, K4LZY
Rocky Mount, WB4WAA
Charlotte, WB4KPF
Roaring Gap, WB4PZA
Level Cross/GBO, K4VUW
Maco, WA4LED
New Bern, WD4JMS
Burnsville, WA4LLR
Fayetteville, WR4ANN
Hndrsnvl/Pinick Mt., WA4NKI
Ashvl/Spivey Mt., WA4KNI
Greenvl/Estn NC, W4GDF
Albemarle, WA4LBT
Grifton, WR4ABP
Grifton, W4NBR
High Point, KA4DHP
Morganton, K4RP
Boone, WA4KDB
Lenoir, KN4K
Simpsonville, WD4BJY
Marion/Old Ford, KA4DEC
Charlotte, WB4KOH
Manteo, W4PCM

WEST VIRGINIA (14-15)

Kingstn/Lick Kb., W8FG
Terra Alta, WB8PHU
Morgantown, W8CUL
St. Albans, WB8GDY
Parsons, K8VNQ
Dunbar, K8VKJ
Richwood, K8VKB
Princeton, WB8NRK
Oak Hill, W8GH
Parkersburg, WD8AXY (2)
Bluefield, W8MOP
McMechen, N8CFX
McMechen, WA8ULB
Franklin, W3RUA

SOUTH CAROLINA (26-30)

Columbia, K4AVU
Columbia, WB4NEP
Anderson/Local, WR4AIO
Andsn/Sasi. Mt., WR4AIO
Greenwood, WB4UGA
Hodges/Grnwd, KB4YF
Lyman, KS4I
Grnvle/Csrs Hd., W4NYK
Grnvle/Paris Mt., W4NYK
Pickens, WB4YXZ
Lancaster, WB4BGF
Lancaster, W4PAX
Columbia, N4EOT (2)
Greenville, W4AZT
Myrtle Beach, WD4JMT
Dillon/Pee Dee, NN4N
Marion, W4YLT
Sumter, WR4AOI (2)
Sasi Mt./Pickens, KJ4X
N. Augusta, K4FKJ
Pickens, KA4EVT
Columbia, K4LNU (2)
Columbia, KC4YI
Cheraw, WD4HEH
Florence, W4ULH
Columbia, WB4OCB
Florence. WA4ISM

VIRGINIA (23-39)

Martinsville, AB4L
Ripplemead, K4TUE
Waynesboro, W4BLD (3)
Danville DCC, WB4GJG (2)
Kilm/Saluda, WA4UAF
Charlottesville, WA4TFZ (3)
Marion, N4BIW
Richmond, WB4QEY
Roanoke/Poor Mt., W4CA
Richmond, W4ZA (2)
Hillsville, WD4BTJ
Staunton, WA4ZBP
Danvl/Wht Oak, K4WQS
Galax/Brirptch/Mt., WR4AHR
Galax, WA4DFH (2)
Bristol, W4SZP
Wythvl/Sant Mt., WA4EMS
Barren Springs, K4HZS
Barren Springs, WR4AFQ
Fincastle, W4WIC (2)
Manassas, W1CRO
Petersburg, K4ARO (5)
Virginia Beach WA4KXV (2)
Lynchburg, WB4DBB (3)

OTHER STATES (4-5)

West Brow, Ga., KC4EV
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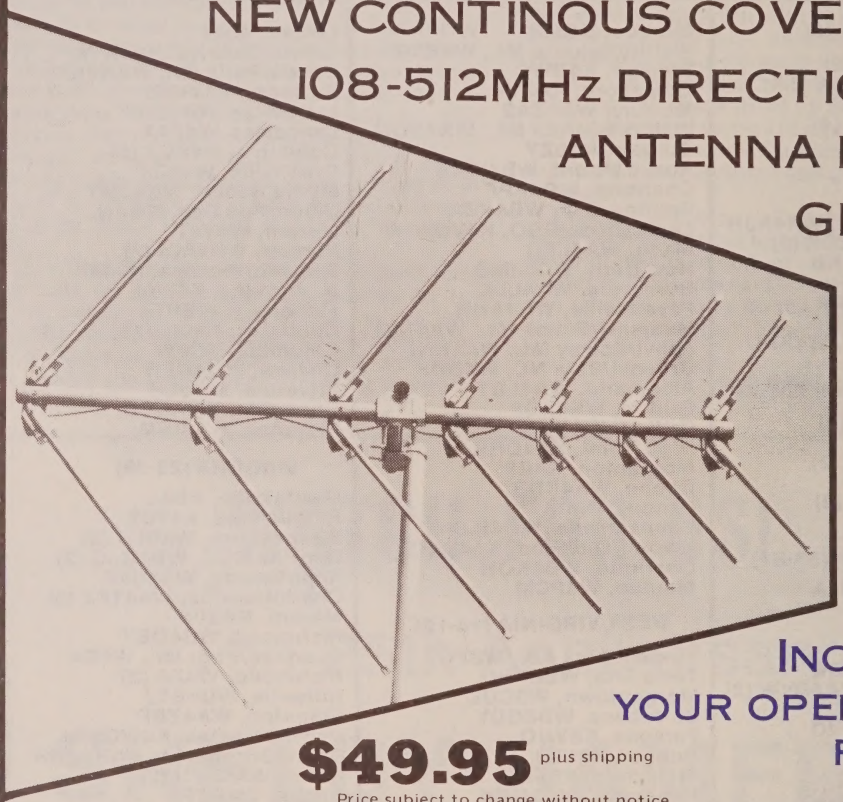

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WB4IOB . . . A PROFILE ON MATT KIRBY

MATT KIRBY relaxes with his good friend John Bechner, WB4FEN, after maintenance work on the Knoxville 13-73 repeater. John (with glasses) has worked with Matt for years on electronic projects.

There are very few hams in East Tennessee that don't know Matt Kirby, WB4IOB. There are many well-known hams in East Tennessee, so wonder why Matt would be better known than the multitudes? Matt, an amateur since 1967, holds a General Class license and a First Class commercial ticket. Quite a few amateurs hold these licenses and more. What then makes Matt stand out in a crowd?

Matt is a victim of Cerebral Palsy, confined to a wheelchair and by standards is considered severly handicapped. Matt has very limited usage of his arms and legs, his speech is affected, but understandable and he uses hearing aids in both ears.

Despite his physical handicaps, Matt has many accomplishments to his credit. He has inspired and helped many others become ham operators. Through Amateur radio he has made a multitude of close friends and these friends serve as his "hands" on many of the electronic projects that he masterminds.

If you listen to the 13-73 repeater in Knoxville for the "coffee drinkers net" about 7:15 a.m. weekdays, you will hear Matt on the way to work. He works a 40 hour week for the City of Knoxville as a technician in the Traffic Engineering Department.

You know the old saying, "behind every good man is a good woman". In Matt's case, it's his mother. She is 73 years young and still going strong. Matts' dad passed away some years back so it has just been the two of them.

Mom gets up at the crack of dawn and dresses Matt, fixes his breakfast and gets him off to work every morning. Many evenings you will find them out for supper of shopping. On weekends in winter you will find them bowling with the Easter Seal handicapped league and in the Summer on Norris Lake with their 17-foot runabout. Matt keeps a standard wheelchair in their stationwagon and mom loads and unloads that chair by herself and pushes him all over the place.

Matt has electric wheelchairs at home and at work, but the one at home is not your normal everyday electric wheelchair. His wheelchair is different by virtue of it being "WB4IOB Controlled". When Matt arrives at home he simply dials up his two meter rig to the control frequency and touchtones that chair right out of the garage and down to the car.

Once he took this special wheelchair to the Radio Amateur Club of Knoxville (RACK) meeting but he never will again. He made the mistake of giving out the control frequency and after that, every ham

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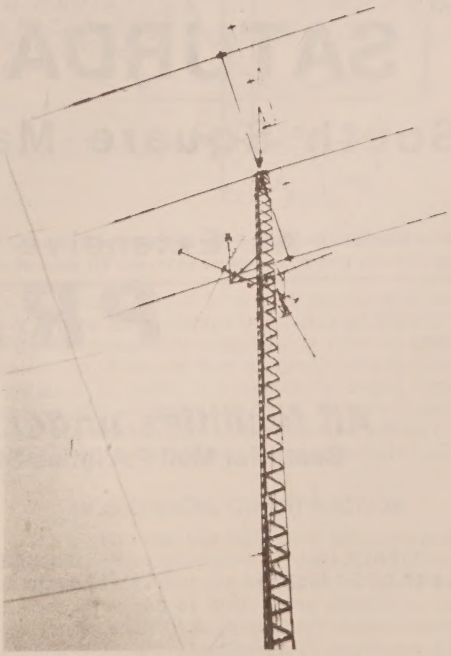

MATT'S personal skyhook at his home in Knoxville.

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UPDATING THE RINGO RANGER

—by Carlton Moseley, W4YVY

The Ringo Ranger has been a favorite antenna for many years. Cush-craft Corp., the manufacturer, recently introduced the Ringo Ranger II. The following article provides some insight into the electrical improvements of the Ringo Ranger II and how you can add homemade improvements to your existing Ringo Ranger.

THE PROBLEM

A vertical antenna is normally fed by a coaxial cable. Usually the center of the coax will feed a resonant antenna element located above the feed point and the shield of the coax will be connected to the mast. The mast becomes the other part of the antenna. Unless a ground plane or choke is used to isolate (decouple) the antenna from the mast, RF current will exist over the complete length of the mast (and coax feed line). This RF current (sometimes referred to as mast current or RF spill over) will also radiate. If the mast is a few wave lengths long, the radiated pattern will be that of a long wire antenna. The mast radiation will combine with the antenna element radiation to give a combined pattern with maximum radiation at some angle other than toward the horizon.

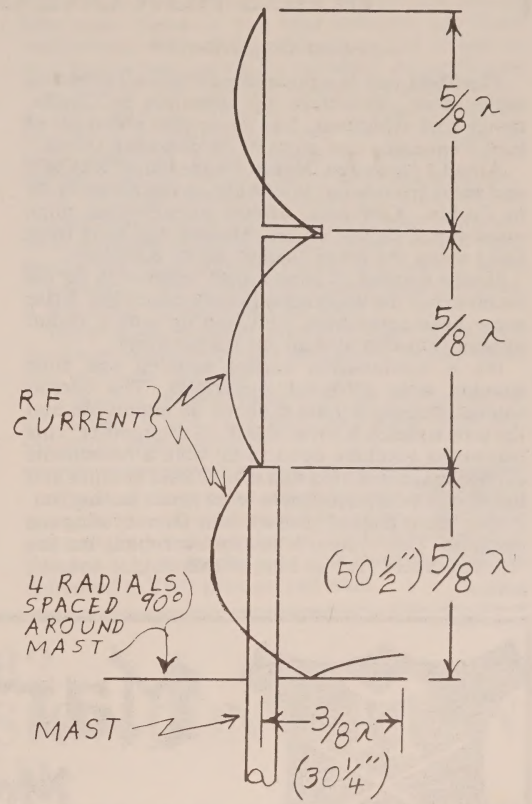
A SOLUTION

Ground planes provide a simple means of controlling RF on a mast and at the same time can make these currents provide antenna gain. A ground plane using 4 radials of 3/8 wavelength radius located 5/8 wavelength below the feed point will provide a tuned antenna circuit. The RF current on the 5/8 wavelength section of the mast from the feed point down to the radials will act like another 5/8 wavelength vertical radiating element. This will cause a Ringo Ranger to look like a colinear antenna with three 5/8 wavelength elements. This combination of 3 elements will give a gain of about 5 dB over a 1/2 wavelength antenna or about 8 dB gain over a 1/4 wavelength antenna. When the improvement in the radiated pattern is considered, the ground plane should give more than 2 dB of gain improvement over a regular Ringo Ranger. Also, the 3/8 wavelength ground plane radials tend to block RF current from the mast below.

Ground plane dimensions for 146 MH are 50 1/2 inches for 5/8 wavelength and 30 1/4 inches for 3/8 wavelength. The dimensions for the regular antenna elements of the Ringo Ranger will remain the same.

For a Ringo Ranger, the existing coax feed arrangement will be used but the point of connection should be checked to obtain the lowest SWR.

The antenna coax feed line needs to be strapped



A Ground Plane added to a 2-element collinear antenna to reduce RF currents on the mast and provide gain.

to the antenna mast at 3 or 4 points with metal screw type hose clamps beginning at a point just under the ground plane and going up to the antenna feed point. Another type of clamp may be used as long as it is metal, it contacts the metal support mast, and it encircles the coax. These clamps are needed to electrically couple the coax shield to the metal mast. Be careful not to squeeze and crush the coax.

MECHANICAL CONSTRUCTION

Each person can use their own ideas on how to construct and mount a ground plane. The following will give an idea that can be copied or modified. A ground plane can be built using aluminum angle stock from a hardware store and some aluminum antenna elements from broken TV antennas. Three

Continued On Page 49

WEAK SIGNAL INTERFERENCE A PROBLEM? HERE'S HOW ONE GROUP STOPPED IT!

—By Sam Kirby, WB4HAP

The 01-61 pair is a popular pair in the Tennessee valley area. Mountain-top repeaters in Chattanooga and Abington, Va. cover just about all of East Tennessee and parts of neighboring states.

About 3 years ago, Henry Heaberlin, WD4KWV and some friends put WR4AOR on the air on 01-61 in Corbin, Kentucky. Henry experienced some weak input signals on his repeater regularly from folks using the other "super" 01-61 machines.

Henry wanted to keep a high sensitivity on his receiver but the weak signals were annoying. After some head scratching, he came up with a rather unique squealch system for his machine.

It's a combination carrier squelch and tone squelch with different thresholds. The carrier squelch threshold is set at about .35 microvolts and the tone squelch is set at about .15 microvolts. This leaves the machine open to all with a reasonable carrier squelch setting and then allows mobiles and handhelds with encoders to work much farther out. It also keeps distant base stations from cycling the machine. This system is not for everybody but the "Corbin crowd" is real fond of this unique squelch action.

This is a very progressive bunch and they are presently working on an 8-pole circularly polorized antenna for the 01-61 machine. When they get the antenna prefected, we hope to get them to share their design with Journal readers. (Editor's Note: There are several other repeaters around with variable squelch operations of some fashion. Anyone interested in sharing their experiences and how it can be built . . . write us.)

HAMFEST CALENDAR EXPANDED

The Repeater Journal Hamfest Calendar this issue is expanded to show not only most all Hamfests and conventions in the area, but also includes other nearby major hamfests and ARRL conventions.

We also have included Dayton, the 1982 and 1983 National ARRL convention dates and places.

Clubs planning hamfests who are not listed, or have tentative dates marked by an asterisk in the Journal Hamfest Calendar should write to the Editor prior to April 1st, so the correct date can be shown in the May issue. Most tentative dates are based on same weekend that shows were held in 1981.

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WVA PLATEAU AND KANAWHA CLUBS INSTALL NEW OFFICERS FOR 1982

—by Ted Wolfe, WD4KHL

The Plateau and Kanawha Valley Amateur Radio Clubs elected new officers in December. They were installed in January.

The new PARC officers are: Joe Roberts KA8IBO, President; Jobill Campbell KA8CGU, Vice President; Henry Maxwell W8AHL, Secretary; and Bobby Wardrep KB8ZJ, Treasurer.

The new officers for KVARC are: Bill Pace KB8ZM, President; Weldon Pierson KB8QY, Vice President; Tina Clark KA8NUN, Secretary; Roosevelt Wilder K8RWF, Treasurer; Betty Hunter KA8MLP, Publicity Officer; and Jeff Clark KA8NNX, Program Director.

Ken Rupe of South Charleston (WD8AEW) was recently named Assistant EC for Kanawha County for 2-meters and Net Liaison under EC Bill Pace KB8ZM, who also supervises the ARES program in the County.

A feed of the current "Westlink" amateur radio news report was aired on the KVARC's weekly 2-meter net Sunday evening, December 13. The club and 14628/88 (WB8CQV) repeater owner are working together to make this a regular feature of the net and to also offer the report over the machine at other times. The technical details on how to handle the report are still being worked out.

KER - CHUNK KER - CHUNK

Does this have a familiar sound to you? It should if you have 2 meter or 220 gear. In a 24 hour period how many times do you hear someone key their transmitter, without identification, just to see or hear some response via the repeater. According to FCC rule 97.123: NO LICENSED RADIO OPERATOR SHALL TRANSMIT UNIDENTIFIED RADIO COMMUNICATIONS OR SIGNALS. In plain language – that means an amateur radio operator **MUST** identify his or her transmissions.

So, when you key your transmitter; whether it is to see if the repeater is working; that your transmitter is working; or you are conducting a test of your equipment – **GIVE YOUR CALL.** If you don't wish to converse – say so politely. People do understand if you can't converse at that time.

The repeater is required by FCC rules to identify itself approximately every 10 minutes. So **LISTEN,** you will hear it identify.

In closing, remember the repeater will benefit us all, better, if not constantly keyed up with unidentified tranmissions.

If you are a repeater owner and you notice there is an "N" beside your repeater listing, that means you are not a full member of the CVRA. You may join for only $8.00 per year and have the Journal delivered to TWO persons you wish.

1982 ARRL DELTA DIVISION CONVENTION AND 16th ANNUAL KNOXVILLE HAMFEST

THE 1982 ARRL DELTA DIVISION CONVENTION WILL BE HELD IN KNOXVILLE, TENNESSEE ON MEMORIAL DAY WEEKEND, MAY 22-23, 1982, AS PART OF THE SIXTEENTH ANNUAL KNOXVILLE HAMFEST. THE CONVENTION OFFERS SOMETHING FOR EVERYONE. FOR THE DXER, DON SEARCH, W3AZD, HEAD OF THE DXCC PROGRAM, WILL PRESENT A FORUM ON DXCC AND WILL ALSO BE VERIFYING QSL CARDS. IN ADDITION, BOB MAY, K4SE, WILL VERIFY QSL CARDS FOR THE CQ-WAZ PROGRAM. FOR THE TECHNICALLY ORIENTED HAM, WE WILL HAVE A FORUM ON FAST SCAN TV WITH K4KFD AND K4ARC, AND A TECHNICAL Q & A SESSION WITH DICK FREY, K4XU. THERE WILL ALSO BE A FORUM ON COMPUTERS AND AMATEUR RADIO. WE WILL HAVE AN ARRL FORUM WITH SEVERAL LEAGUE DIGNITARIES, AND OFFICIAL MEETINGS OF MARS. SEVERAL ACTIVITIES ARE PLANNED FOR NON-HAM LADIES. IN ADDITION, THE 1982 WORLD'S FAIR WILL BE HELD IN KNOXVILLE FROM MAY 1 THROUGH OCTOBER 31. THIS IS A GREAT OPPORTUNITY TO COME TO THE HAMFEST AND STAY TO VISIT THE WORLD'S FAIR. FOR MORE INFORMATION, WRITE TO:

RAY ADAMS, N4BAQ, 5833 CLINTON HWY., SUITE 203, KNOXVILLE, TN 37912
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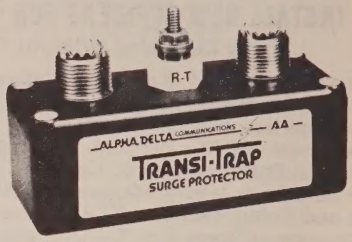
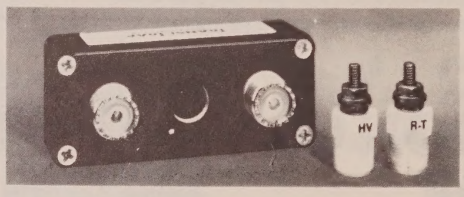


Transi-Trap Surge Protectors are gas surge arresters designed to protect sensitive electronic equipment from damage due to excessive voltages or currents generated by transient phenomena.

The elements in the Arc-Plug™ Cartridge are constructed of two metal electrodes hermetically sealed in a gas filled, rugged ceramic cylinder. They perform as voltage dependent switches which can reliably and repeatably carry large currents for brief periods of time. In operation, application of a sufficient voltage across the element causes an arc to form between the electrodes changing its impedance from greater than 10,000 megohms to a few milliohms in a time period of less than 100 nanoseconds. While conducting in the arc mode the voltage across the surge arrester is less than 30 volts.



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1. AlphaDelta Transi-Trap Surge Protectors are designed for indoor installation at the rear of the equipment* (receiver or transceiver for Model R-T, linear amplifier for Model HV). If outdoor use is planned, it will be necessary to coat thoroughly all surfaces (after attaching coax and ground wire) with a good sealer/protector such as silicone spray. One type is "Slipicone® " made by Dow-Corning.
2. These surge protectors utilize a unique isolated ground system which permits direct earth connection while preventing arc energy from being coupled to the equipment chassis through the coax shields. Lab tests show this method to be best for overall protection. For the system to work, it is **absolutely necessary** to attach a direct earth ground wire to the nut and washers on the Arc-Plug Cartridge. (A cold water pipe connection is suitable if its ground path can be determined and if it is not too long or circuitous.) The surge protectors will not function without this connection as there is not other return path for the arc energy. Tests show that #12 AWG aluminum ground wire is adequate for relatively short runs (10 to 15 feet) with coax braid material recommended for longer runs. Be sure the ground wire does not touch other metal, such as connector shells.

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CVRA DISTRICT RAMBLINGS

Compiled by Repeater Journal Correspondents

PARKSLEY, VA.—A new 2-meter repeater is in the works for the Eastern Shore of Virginia. CVRA-SERA has coordinated the frequency of 855-255 for the local coverage machine for WA4TVS. (Mike, KC4AO)

• • •

PENNSBORO, W.VA.—Wayne Britton, WA8CRW writes the Pennsboro 90-30 repeater was hit by lightening last Summer and totaled. He said there are no plans for replacing it and the sponsoring club has disbanned.

• • •

BURGAW, N.C.—The 34-94 repeater at Burgaw was first put on the air at Beaulaville in 1967 by Donald Brown, WA4UMK. The WR4ADS machine was later donated in 1977 to the Four County ARC and was placed on the air in Burgaw in Sept. of 1977. Since that time, all equipment has been updated and replaced to its present state. The 34094 is still running strong after more than 14 years service to the area. (J. B. Shepard, Raymond Fields)

• • •

WELCH, W.VA.—The McDowell ARC has been reformed and plan to move their club repeater, WB8SXZ to a new location. The club is starting a newsletter and plan to increase activities for club members. The 85-45 sub-band machine will continue for the clubs communications activities. (Andy Pitt, WB8WEZ)

• • •

OAK HILL, W.VA.—The Plateau ARA announces new officers for 1982. They are: President, Joe Roberts, KA8IBO; VP, Joe Campbell, KA8CGU; Secretary, Henry Maxwell, W8AHL and Treasurer, Bobby Wardrep, KB8ZJ. The clubs 19-79 repeater is sporting a new repeater call, W8GN. The club meets 1st Tuesday at the American Legion Home in Fayetteville at 7:30 p.m. (Bill Wilson, WA8TYM)

• • •

PORTSMOUTH, VA.—The 25-85 repeater in Portsmouth is moving to a new location. The new site is at the 360-foot level on the WFOG tower with a Hustler base station antenna. The G.E. Master Pro machine will continue as an open repeater on the air 24-hours. N4PR is the trustee. (Wally, WA4KXV)

• • •

MARION, N.C.—KA4DEC, Ray Hauke and a group of Amateurs in Marion, plan to put on a repeater soon. The CVRA-SERA coordinated repeater frequency of 705-105 will be used. More information later. (Ken, WA4BVW)

• • •

LINWOOD, N.C.—KA4HEV, Richard Simerson has put a new 220 mhz repeater on the air at Linwood. The 222.38-223.98 machine precedes a planned 440 mhz machine in that area soon. (Ken, WA4BVW)

• • •

CHARLOTTE, N.C.—The 84-24, WB4KPF repeater in Charlotte is changing frequencies to 615-015. Lee Harris owner of the machine said he was experiencing interference from a South Carolina repeater, which prompted the change. (Ken, WA4BVW)

KNOXVILLE, TN.—The Radio Amateur Club of Knox Co. (RACK) held its annual Banquet in December. Attendance was in excess of 50 persons. The feature of the dinner was a "roast" for Ed Dunn, W4NZW, Vice-Director-elect for ARRL Delta Division. Ed was presented several memorabelia of his exploits including the left footed key and a blank certificate, listing his achievements. An engraved purple crystal was awarded --4- in consideration of his record of timed out repeaters.

• • •

RICHMOND, VA.—A new medium coverage 2-meter repeater will go on the air in the Spring in the Virginia capital. The machine, to be on 83-43 sub-band, will be tone access. A Stationmaster antenna fed with 3/4-inch hardline will be at the 500-foot level on a 1,000-foot tower on the southwestern edge of the city. Modern solid state equipment and a new duplexer will be used. The group putting the repeater on the air is called the Metropolitan Repeater Association, composed of many area amateurs. (Mike, KC4AO)

• • •

CHESAPEAKE, VA.—The 19-79 repeater at Oak Grove is moving to the WTKR tower at Irvin. The new site is at 500 feet. The group has a G.E. Mastr Pro with a Z80 microprocessor control unit. Sperry Davis, N4SD built the control unit to complement the repeater with autopatch operating 24 hours daily. (Wally, WA4KXV)

• • •

TIDEWATER AREA, VA.—Notes: The Portsmouth 220 repeater scheduled for 223.02-224.62 never got off the ground and is no longer planned . . . The 6-meter repeater in Norfolk on 52.525-52.525 has a new trustee, W4NV, Jim Harrison. (Wally, WA4KXV)

• • •

CHARLOTTESVILLE, VA.—After a long overhaul program, the 16-75 repeater now has clean audio. Antennas are reworked and hardline has been renewed. The solid-state, battery powered repeater will include all the bells and whistles upon completion. (Ron, K4RKA)

• • •

KNOXVILLE, TN.—Big happenings in this city this summer. The World Fair, Knoxville Hamfest in May, Delta Division ARRL Convention and lots of work providing communications on two new planned World's Fair repeaters. (Sam, WB4HAP)

• • •

CHARLOTTESVILLE, VA.—The long awaited 3250925 repeater has been put in service with the duplexer and user controlled 6-meter (52.525) remote base operation. Fancier control equipment is in the works as well as equipment from 10-meters remote base tie-in. (Ron, K4RKA)

• • •

WINSTON-SALEM (SAURATOWN MT.)—Don Edwards reports he is now working with Tommy, WB4SNA to get the sub-band repeater 79-39 on the air on the mountain. On air is expected any time. Don said some linking is planned from the repeater.

Continued On Page 17

"HAVING RIG PROBLEMS ?"

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CVRA DISTRICT RAMBLINGS

Continued From Page 15

COLUMBIA, S.C. — The KC4YI repeater on 449.10-444.10 formerly located on Little Mt. has been moved to a building in downtown Columbia. The machine is open and John KC4YI invites interested Amateurs in the Columbia area to try UHF: (Al, N4EOY)

• • •

OAK RIDGE, TN. — The WA4YON 220 repeater is getting an autopatch. Working together on the project are KB4NK, WB4BYH and WA4YON. The patch will be linked to the Knoxville phone exchange. The 222.86-224.46 machine hopefully will attract more 220 activity in middle-East Tennessee (Gene, WA4YON)

• • •

SOUTH CAROLINA HAMS NOTE — The CVRA-SERA is looking for an active VHF-UHF (either or both) amateur in the Piedmont area of the State to assist in news-gathering and promotion of the CVRA-SERA in that area. Anyone interested, please contact Al Harney, N4EOY, S.C. Director at phone or address listed on back cover.

• • •

OAK RIDGE, TN. — Roaul Wright, K4EAJ, owner of the 72-12 and 75-15 machines on Windrock Mountain has coordinated a UHF frequency on 449.40-444.40 for a Remote Base unit, and linked to the 72-12 machine in the beginning. Later it will be switched to a regular repeater. (Roaul, K4EAJ)

WEST VIRGINIA NOTES

—by Ted Wolfe, WD4KHL

The Black Diamond ARC at Beckley expects to activate a new repeater early in 1982 at the city's Emergency Operations Center. The new repeater, 144.770/145.370 (WD8POF) will be located on a 180-foot self-supporting tower in the downtown area, according to KA8EMX. Plans are to tie it into the other linked machines of the Appalachian Repeater Association which is being organized. The others in the linked system are the 145.31 (N8BZS) Layland repeater, the 145.17 (WB8LVH) Bolt, WV, repeater, and the 449.800/444.800 mhz (KA8EMX) repeater at Lick Knob. Work into any of those machines and you'll be into all of them.

KANAWHA ARC INSTALLS OFFICERS

The Kanawha ARC of Dunbar, W.Va. installed new officers for 1982 at their January meeting. The new President is Bill Pace, KB8ZM; VP, Weldon Pierson, KB8QY; Sec., Tina Clark, KA8NUN; Treasurer, Roosevelt Wilder, K8RWF.

Also, Jeff Clark, KA8NNX, was named Program Director with Betty Hunter, KA8MLP, Publicity and Steve Rice, K8SR, publisher of the club's newsletter "Splatter". Editor is Carl Gregory, K8CG.

The Kanawah-Fayette-Clay ARA 144.87/145.47 W8FG Lick Knob repeater was off the air several days in early November and again in early December for its first major maintenance since its installation in June 1980.

That machine, one of the first in this area in the sub-band, has since been joined by the 144.71/145.31 (N8BZS) repeater on Mann Mountain, near Layland, WV, the 144.57/145.17 (WB8LVH) repeater near Bolt, WV on the Raleigh-Wyoming County line, and the 144.67/145.27 (N8APH) repeater on Horsepen Mountain near Kermit on the Logan-Mingo County line.

• • •

Kanawha Valley hams met Nov. 20 and Dec. 18 in St. Albans to discuss RTTY and the feasibility of a new for the area and the possibility of establishing a 2-meter RTTY repeater.

In November, The K-F-C-A-R-A at Pratt voted to join the Plateau ARC in sponsoring the Fayetteville, WV, hamfest scheduled for Sunday, February 21, at the Memorial Building.

In December, the Black Diamond ARC in Beckley also voted to become a co-sponsor.

• • •

Southern West Virginia hams are also able to access the new 144.59/145.19 repeater at Pikeville, Kentucky.

The 144.85/145.45 (N8ACQ) repeater at Welch was recently moved from the Mt. View High School site to Caretta Mountain, improving its coverage. Andy Pitts WB8WEZ is secretary of the reorganized McDowell ARC which meets each month at Mt. View High School. Andy reports instruction in amateur radio is given in two county high schools and one junior high as part of the regular curriculum.

• • •

Another 145.45 repeater was heard and worked late in the year in neighboring Kentucky. But Dave Vest KZ4G advised that since the improvements at Welch he's moving that new repeater to 147.795/195 and that it should be on-site soon. Dave said to list it as an Ashland, Kentucky, machine.

Operators of the 146.40/147.00 (WB8GDY) repeater at St. Albans improved its coverage in October with installation of a new antenna.

Improved coverage is also reported for the Alderson, WV, WR8AKE 146.13/73 repeater since installation of a new antenna. I'm told you can now access that repeater from Blacksburg, Va.

The 146.37/97 repeater serving Logan was off the air for several months for repair and relocation. Sponsors hoped to have it back on the air from Rattlesnake Mountain overlooking Logan late in 1981. With its move from Blair Mountain it will get a new call to replace the old one, WR8ADD, so I am told.

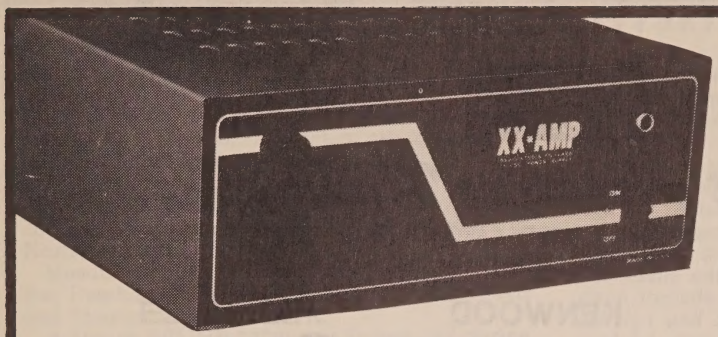
SHORT STUFF!

K4### with the group to pick it up, this is W4@@@ . . . . . kerchunk. "Ugh" (Too Heavy to pick up the group) . . . . . kerchunk.

NORTH CAROLINA CLUB MEETING CALENDAR — Information Supplied by Clubs

ASHEVILLE - W. Caro. ARS. Bus. 1st Thur., 1930; 2nd Mon. 1930, Various Locations
BENSON - Johnson ARS. 3rd Thur., 1930 at 50-210 Fire Station
BURLINGTON - Alamance ARC. 2nd & 4th Monday 1930, at 230 E. Summit Ave.
BURLINGTON - Alamance Repeater Assoc. Inc. Last Sat. 1900 at B&J Cafeteria
CARY - Cary ARC. 4th Thur. 1930 at White Plains Methodist Church, Activity Bldg.
CHARLOTTE - Mechlenburg ARS. Last Tue. 1930 at Red Cross Bldg. on Park Rd.
CHARLOTTE - Charlotte ARC. 4th Thur. 1900 - Club Building - WSOC-TV Tryon Street
CHARLOTTE - Friday Lunch Group. Fri. 1200 at Mediterranean Rest. on Independence Blvd.
CONCORD - Cabarrus ARS. 3rd Mon. 1930 at Kimball Lutheran Church, Aux. Bldg., Kannapolis
DURHAM - Durham FM Assoc. 2nd Tue. 1800 at Picadilly Cafeteria, So. Sq. S. S.
DURHAM - Triangle Radio Alert Network. 3rd Thur. 1800 at Picadilly Cafeteria, So. Sq. S. S.
EDEN - Rockingham City ARC. 1st Mon. & 3rd Thur. 1900 at Eden Mall Community Room
FAYETTEVILLE - Cape Fear ARS. 3rd Mon. 1900 at Methodist College
FRANKLIN - Franklin ARC. 2nd Thur. 1900 at Macon Savings & Loan Assn.
GASTONIA - Gaston City ARS. 1st Mon. 1900 at Community Room at Eastridge Mall
GOLDSBORO - Wayne County ARA. 3rd Sat. 2000 at Family Kitchen, Goldsboro
GREENVILLE - Brightleaf ARC. 2nd Tue. 2000 at Planters Nat. Bank, downtown.
GREENSBORO - Greensboro ARA. 4th Mon. 1830 at Founders Hall, Guilford College
GREENSBORO - Guilford Am. Soc. (GAS). 2nd Mon. 1830 at diff. restaurants announ. on Repeater
HIGH POINT - High Point ARC. 1st Mon. Western Sizzler on Main.
JACKSONVILLE - Onslow ARC. 2nd Tue. 1915 at Carolina Barbecue.
KANNAPOLIS - Cabarrus County ARS. 3rd Mon. 1930 at Kimball Memorial Lutheran Church, Activity Bldg.
LAURINBURG - Scotland County ARS. 1st Wed. at Cablevision Office
LEXINGTON - Healing Springs Mt. VHF Soc. Last Mon. 1930 at Burlington House Furn. Co., Pers. Off.
LUMBERTON - Lumberton ARC. 3rd Thur. 1930 at Robeson County Public Library
MAIDEN - Centralina ARC. Last Tue. 1900 at Citizens S&L, So. Hwy 321
MORGANTON - Morganton ARC. 1st Mon. 1930 at W. Piedmont Community College
NEW BERN - New Bern ARC. 3rd Thur. 1930 at Country Kitchen
N. WILKESBORO - Foothills ARC. 1st THur. 1930 at CAP Bldg. Wilkesboro Airport
RALEIGH - Raleigh ARS. 1st Wed. 1930 at West Community Room, Crabtree Valley Mall
ROCKINGHAM - Rockingham ARC. 1st Thur. at East Rock Fire Dept.
ROCKY MOUNT - Rocky Mount ARS. 3rd Thur. at Golden Corral in Rocky Mount
SALISBURY - Rowan ARS. 2nd & 4th Mon. 2000 at Salisbury City Hall, Main Street
SHELBY - Shelby Radio Club. 3rd Mon. 1830 at Western Steer, Shelby
SILVA - Smokey Mt. ARC. 2nd Tue. 1900 at Southwest Tech. Institute
STATESVILLE - Iredell County ARS. 2nd Thur. 1900 at Agriculture Bldg., Water & Tradd Sts.
WILMINGTON - VHF Society. 2nd Tue., Odd Months, 1930 at Cameron Ed. Bldg., New Hanover Mem. Hosp.
WINSTON SALEM - Forsyth ARC. 2nd Mon. 1930 at Red Cross Building

CLUB SECRETARIES! The Repeater Journal Will be glad to List your organization in the Club Calendar. Send information to The Editor, his name and address is listed on page 1 of the Journal.



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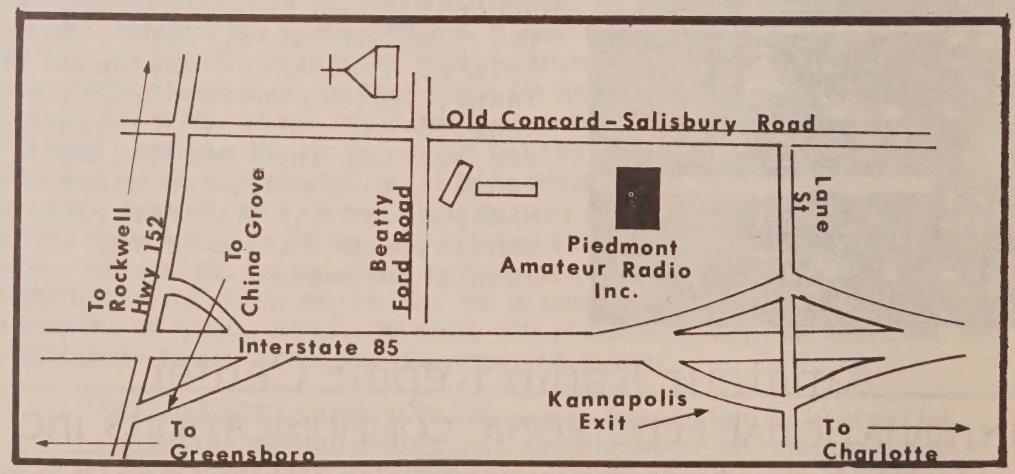

NC CALL PLATES LOBBYING EFFORT TAKING SHAPE

—by Wayne C. Williams, K4MOB

As we reported in the last issue of the Repeater Journal, a group of Amateurs are planning a lobbying effort in the Spring session of the North Carolina General Assembly in an attempt to get a bill passed to change the procedures and excessive costs of purchasing Amateur Call letter plates in North Carolina.

Heading up the effort are: Phil Wicker, W4ACY, Rae Everhart, K4SWN, Charlie Everest, W4HKB and Thomas Moore, N4AVR.

A House Bill (HB-1379) was introduced during the 1981 session of the General Assembly by Representative Joe H. Hege, Jr. of Lexington, proposing the repealing of the N.C. General Statutes 20-81.1 as it related to amateur radio license plates placing a charge of $10.00 to have the plates made, then the regular license fee to get the tags. They had to be re-purchased under those circumstances each year.

Everest told the Journal that the group has applied for a Lobbying permit (which requires a $50.00 fee) for the Spring Session. He said he and the group is writing every Amateur club and organization in North Carolina that he can, urging them to get a petition started, and for individual amateurs to write their Congressmen and Senators in the State Legislature of North Carolina urging the passage of HB-1379, which will come before legislature this late spring.

He said they will have a booth at the Charlotte Hamfest in March to acquire and collect signatures on petitions. Everett said that clubs and groups who had started petitions could turn them in at the Charlotte Booth. Petitions should be started by every club by a designated member who can get signatures from everyone and then be responsible for turning it in to the booth at Charlotte, or to Everett, Wicker, Everhart or Moore.

Briefly, the bill (HB-1379) has a purpose of modifying existing legislation pertaining to Amateur Call plate charges, and adding new legislation. The bill includes modifying the legislation to (A) delete the $10.00 fee, or a maximum of $4.00 be charged as an alternative.

The bill explains the basis and purpose of amateur radio services, how they work in public service on a voluntary basis with no pay . . . How emergency communications assist cities and communities in time of emergency . . . and various other things amateur operators participate and exhibit their skills.

The bill asks for the following additional legislation:

(A) Issue Amateur Radio license plates for a period of 5 years instead of the current 1 year rule.

(B) Allow persons with these plates to purchase renewal stickers for license plates at regular price of current renewal sticker for private passenger or trucks.

(C) Allow persons who qualify, make proper application and receive their Amateur Radio Callsigns on motorcycles.

(D) Allow amateurs to have the name callsign on more than one vehicle such as the States of Tennessee and New Jersey now have (Examples given include the basic callsign for one vehicle, callsign and diget 1, 2, etc. for more than one vehicle). Other alternatives include adding after callsign letters denoting various modes of operation such as SSB, FM, M, A, R etc. for additional vehicle identification.

Everest said he hoped every club in the State would respond with petitions and help get the call letter license plate mess corrected in North Carolina.

If you feel you would like to assist in this effort, the Repeater Journal is printing the wording suggested by the lobbying group for your petition. After you get your names, mail it to one of the persons we have mentioned. Their addresses are good in your Callbook.

PETITION

We, the undersigned licensed Amateur Radio Operators residing in the State of North Carolina, are opposed to the recent increase in the special license plate fee instituted in this state. We feel the increase from $4 to $10 is unfair, unjustified, and unnecessary. We believe that the public service performed by the Amateur Radio operators in this state should be recognized and appreciated for its invaluable benefit in times of disaster and emergency. We neither receive, nor can accept, any monetary renumeration for our public service. We are appreciative of the public recognition these special license plates provide.

Therefore, we the undersigned, do hereby petition the State of North Carolina and our elected officials to repeal the $10 special license fee for Amateur Radio special license plates. (end petition wording.)

Persons making petitions should type the preceding wording across the top of a page, then make space on remaining portion of page for amateurs to write in: (1) their name (2) call sign (3) address (4) and date signed.

FAYETTEVILLE HAMFEST FEB. 14

The Plateau ARC announces their Fayetteville, W.Va. hamfest on February 14. Inside heated facilities with dealers and fleamarket. Food available on premises. Prizes and eyeball QSO area. Come and spend day with your friends.

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YOU THOUGHT YOU WERE COLD!

Continued From Page 1

We got there soon and couldn't find a gate open, my radio had broken and I couldn't call anyone. Finally after circling the fairgrounds twice we found the gate and went in. Then we couldn't get in the building. I could see people in the cracks of the double doors down on the other end.

Well we got their attention and they opened the doors and we drove the van inside the building. We checked our space and then I got back in the truck and started down the narrow isle to my tables. My bifocals were on and . . . well . . . somehow my van caught a table, smashing it into three other tables. Scratch two booths!!

Fortunately no damage to van or tables, just my ego. We unloaded, chatted with friends and then left for the motel. We drove back to I-95, no motel, we drove up I-95, back down I-95, across to I-64W, still no motel. (incidently, each time you go through some areas, you hit toll booths, we hit lots of them . . . several times).

We finally found our motel at 11:00 p.m., got checked in and planned a restful night. But it wasn't to be. Our room was across from the Richfood warehouse where 32 tractor trailers were parked. You know what they have to do with diesel engines in cold weather . . . run them all night. Aside from the Diesels running, our heating unit in the room rattled too.

Actually when 6:00 a.m. came around, I was glad. My wife and I trudged in the 7-degree, 35 mph weather to the restaurant and had a nice breakfast.

We went then straight to the fairgrounds. Things looked great, the building was toasty warm, lots of people coming in early, seeing lots of friends. We set up our "ghunque" and waited with smiles of anticipation as droves of people started coming through the doors. At about 9:00 a.m. it happened!! The lights went out. (Imagine a 26,000 square foot building with about 4,000 people and no lights) the RATS club immediately opened doors on both sides of the building to provide some twilight for us to see and protect our valuables. Many enterprising hams ran to their cars and brought in flashlights, and everyone took it in stride, walking around and looking as much as possible.

We understood a speeding car had chopped down a light pole about 6 blocks away and knocked off the power. The power company said they would have it back on with emergency equipment in about 30 minutes.

Meanwhile, it was getting colder . . . and colder . . . and colder. People were walking and stomping around trying to keep warm. Many went to their cars to try to keep warm, but hundreds chose to continue milling around and make the best of it.

Finally, just before noon, the lights flickered and came on and with a resounding Hooray and applause from the crowd the Hamfest continued. By 1:00 p.m. we were beginning to feel our ears and toes again as the excellent heating system labored to bring temperatures back up to normal. The remainder of the hamfest went without a hitch. Attendance was excellent and everyone was having a good time. The building was full!

At about 3:30 after the prize drawing, we all started breaking down our booths and loading for the journey home. (weather: 6-degrees and 35 mph winds)

Loaded and the truck warmed up, Gerry and I started Southward. But with a chill factor of about 50-degrees below zero, we discovered the van was NOT going to get warm. You see, I never did get a change to plug those air holes under the dash and around the firewall. Beside that, the wind was so cold, it was cooling the heater hoses faster than the water could circulate into the heater . . . result, cold air.

How cold was it? It was so cold that one of our coffee cups about half full of coffee froze solid.

To make a long story short, Gerry and I bundled in our coats, blankets and even tableclothes managed to make it back to Colfax by 9:00 p.m. Sunday night after numerous coffee stops to warm up. Fortunately our sons were home and had a roaring fire going in the fireplace and by 11:00 p.m. we thawed out and went to bed.

So that's the way it was on Sunday . . . January 10th. When those boys in Richmond advertise a FrostFest . . . they mean it! Actually it was a great show, attendance was very good and the Richmond club did a magnificant job despite the unfortunate circumstances that occured.

Go back next year? Who . . . me? You bet I will!!!

—Wayne C. Williams, K4MOB

RALEIGH HAMFEST APRIL 18

The Raleigh (N.C.) ARS announces their 10th annual RARS Hamfest on Sunday, April 18. Expanded Flea Market under covered parking deck of Crabtree Valley Shopping Mall. Hospitality room Saturday evening 7 to 10 p.m. Walk to 3 nearby hotels. Special interest meetings to be held. For infor write: RARS Hamfest, P.O. Box 17124, Raleigh, N.C. 27619. Talkin on 04-64 and 28-88.

ELKIN HAMFEST FEB. 21

The 1982 Va./Carolina Elkin Winter Hamfest will be held at the Elkin, N.C. National Guard Armory on February 21. Heated flea market and dealer booths, prizes, food inside armory. Talkin on 69-09 or 77-37 sub band. Write for tickets to Ron Spurlin, Rt. 4, Box 347-A, Galax, Va. 24333. Your advance tickets will be held at the door for your arrival.

THE RALEIGH AMATEUR RADIO SOCIETY'S

AN ARRL APPROVED (RARS)

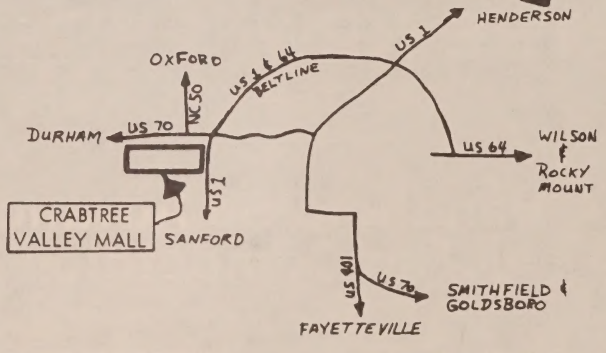
10TH ANNUAL HAMFEST

$4.00 GENERAL ADMISSION

ACTIVITIES BEGIN AT 8:00 A.M.

APRIL 18 1982

CRABTREE VALLEY MALL
US 70 WEST
RALEIGH, N.C.



★ PRIZES!!! PRIZES!!! PRIZES!!!

1ST PRIZE – Choice of Kenwood TS830S HF Transceiver or an ICOM IC251A Multi-Mode 2m Transceiver with a Mirage B-108 80 wwtt amplifier. Courtesy of G.I.S.M.O. of Rock Hill S.C. and RARS.
2ND PRIZE – An ICOM25A 2m Transceiver, Courtesy of G.I.S.M.O. and RARS.
3RD PRIZE – A Heavy Duty Antenna Rotor, Courtesy of Telex-Hygain and RARS.
4TH PRIZE – A Heath HM-2140 HF Dual SWR and Wattmeter, Courtesy of RARS.

MANY OTHER PRIZES WILL BE DRAWN ALL DAY SUNDAY!!!

★ **E-X-P-A-N-D-E-D- FLEA MARKET (Covered)**

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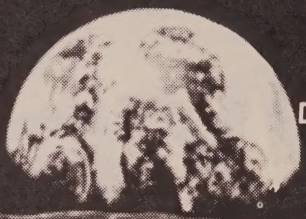
★ TALK-IN SATURDAY AND SUNDAY
W4DW (146.04/146.64)
K41TL(146.28/146.88)

★ **SPECIAL INTEREST MEETINGS: M.A.R.S., & OTHERS.**

FOR ADDITIONAL INFORMATION, DETAILS, OR RESERVATIONS WRITE:
RARS Hamfest, P. O. Box 17124, Raleigh, N. C. 27619



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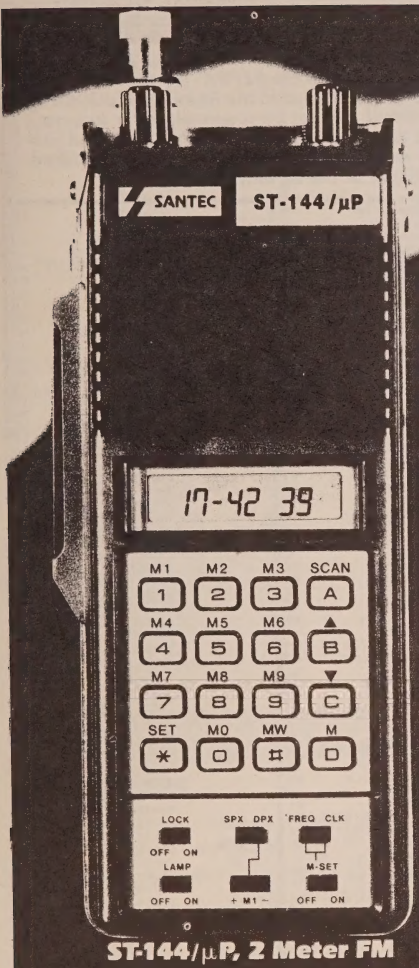
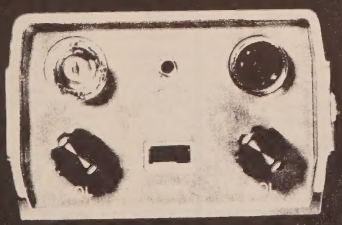


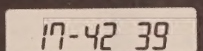
ST-144/μP, 2 Meter FM



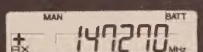
It's Time!

■ It's time you got your share of the excitement of full-feature synthesized handheld operations. ■ SANTEC(nology zaps to the lead of the state-of-the-art in 2 meter handhelds with the new ST-144/μP. ■ Only SANTEC hands you all the up-to-the-minute features of this "clockwise" precision jewel.

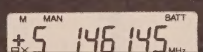
■ The 24 hour format digital clock on the LCD display is uniquely SANTEC, and it typifies the thoughtful operator-oriented design incorporated throughout the ST-144/μP. ■ Not only does it give you accurate time checks whenever you want, but also it can display the time instead of the frequency, while this handful of radio continues to operate on your "favorite" frequency.



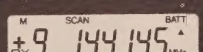
24 Hr Clock provides time of day even while the radio is turned off, or it can be selected by the front panel switch while in QSO.



Full Frequency Display showing offset selected, battery condition and current scan mode. At turnon, the contents of M-1 are loaded into the operating register, and the display looks like this



The Memory Mode is indicated by the small "M" above "+" the "5" indicates that the data were stored in Memory 5 before recall. The "+" indicates that the + offset was stored with the frequency



Memory Scan with "Priority Scan Auto-Resume" has stopped on Memory 9 to listen for a few seconds

Transmit is indicated on a minus 600 kHz offset from 146.820 MHz which was stored in M-6. Activity on Memory 6 was found by using the "Search" mode of Scan

■ The 10 frequencies that you put into the memories are stored with your repeater offsets, and you can have them scanned, searched or instantly recalled at the touch of a button. ■ Memory 1 even gets priority treatment in the memory scan mode. ■ That's timely complexity made amazingly simple: and the high power option of 3.5W (nominal) is simply the greatest reach you've ever held in your hand.

■ "Battery saver" function by the computer to hoard battery power when the frequency is quiet ■ Programmed limits for both ends of bandscan ■ Simplified frequency entry only by keyboard ■ Full capacity, low impedance audio output to drive an external speaker ■ Wide band span for MARS, CAP, AF MARS: 142.00-149.995 MHz ■ Quick-change 500mAh battery ■ Separate level controls for MIC, TT, PL and DEV ■ & so much more that we don't have space to mention ■ SANTEC hands it all over, while others can't even give you the time of day.

All stated specifications are subject to change without notice or obligation.

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Leather Case (ST-LC)
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The By City Index Appears On Following Pages

TWO METERS

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	KNOXVILLE	TN
4.57 /5.17	LOUDON	TN
	MURFREESBORO	TN
	BOLT MT	WV
4.59 /5.19	PIKEVILLE(KY)	TN
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	BLUEFIELD	WV
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	ALDERSON	WV
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	ROANOKE	VA
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	GRIFTON	NC
	CHARLESTON	SC
	COLUMBIA	SC
	BRISTOL/HLSTN MT	TN
	NASHVILLE	TN
	CHARLOTTESVILLE	VA
	FOREST	VA
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	MORGANTOWN	WV
	WHEELING	WV
6.175/6.775	ELIZABETHTOWN	NC
	WYTHVL/SAND MT	VA
6.19 /6.79	LEVEL CROSS/GBO	NC
	ANDSN/SASFRAS MT	SC
	SUMMERVILLE	SC
	CHATTANOOGA	TN
	JOHNSON CTY	TN
6.19 /7.51	MEMPHIS	TN
6.19 /6.79	NASHVILLE	TN
	CHESAPEAKE	VA
	FAIRFAX	VA
	OAK HILL	WV
6.205/6.805	GASTONIA	NC
	WASHINGTON	NC
6.22 /6.82	DURHAM	NC
	ROARING GAP	NC
	WILMINGTON	NC
	GRNVLE/PARIS MT	SC
	LAKE CITY	TN
	MEMPHIS	TN
	WINCHESTER	TN
	COVINGTON	VA
	WINCHESTER	VA
	CHARLESTON	WV
	CLARKSBURG	WV
6.235/6.835	ASHEVILLE	NC
	WADESBORO	NC
	HAZEL MT	VA
6.25 /6.85	GOLDSBORO	NC
	HICKORY/BRT. MT	NC
	REIDSVILLE	NC
	FLORENCE	SC
	LAURENS	SC
	COVE MTN/GTLBG	TN
	MEMPHIS	TN
	NASHVILLE	TN
	PORTSMOUTH	VA
	STAUNTON	VA
	BKLY/FLAT TOP MT	WV
	BUCKHANNON	WV
6.265/6.865	HIGH POINT	NC
6.28 /6.88	RALEIGH	NC
	SHELBY	NC
	SAVANNAH(GA)	SC
	BRISTOL	TN
	MEMPHIS	TN
	NASHVILLE	TN
	OAK RIDGE	TN
	BRISTOL	VA
	RICHMOND	VA
	SALEM	VA
	CHARLESTON	WV
6.31 /6.91	AHOSKIE	NC
	ASHVL/SPIVEY MT	NC
	FAYETTEVILLE	NC
	LEXINGTON	NC
	WHITE HALL	SC
	SAVANNAH	TN
	SHORT MT/SMTHVL	TN
	FAIRFAX	VA
	FARMVILLE	VA
	JONESVILLE	VA
	RIPPLEMEADE	VA
	COTTAGEVILLE	WV
	FAIRMONT	WV
	MCMECHEN	WV
6.325/6.925	CHARLOTTESVILLE	VA
	DANVILLE(DCC)	VA
6.34 /6.94	BURGAW	NC
	CHARLOTTE	NC
	DURHAM	NC
	MANTEO	NC
	CHARLESTON	SC
	COLUMBIA	SC
	GREER	SC
	KNOXVILLE	TN
	MEMPHIS	TN
	NASHVILLE	TN
	HAMPTON	VA
	LYNCHBURG	VA
	RICHMOND	VA
	ROANOKE	VA
	BECKLEY	WV
	NEW MARTINSVLLE	WV
	RICHWOOD	WV
	WEIRTON	WV
6.355/6.955	ROCKINGHAM	NC
6.37 /6.97	KINGS MTN	NC
	MT AIRY	NC
	SMITHFIELD	NC
	ANDERSON/LOCAL	SC
	FLORENCE	SC
	SAVANNAH(GA)	SC
	ALTAMONT	TN
	KNGSPT/BAYS MT	TN
	MEDINA	TN
	OAK RIDGE	TN
	MANASSAS	VA
	VIRGINIA BEACH	VA
	LOGAN	WV
	PARKERSBURG	WV
6.385/6.985	ALBEMARLE	NC
	ROANOKE/POOR MT	VA
6.40 /7.00	HIGH POINT	NC
	JACKSONVILLE	NC
	MARION	SC
	PICKENS	SC
	MEMPHIS	TN
	SUFFOLK	VA
	ST ALBANS	WV
6.415/7.015	BLUEFIELD	VA
	BLUEFIELD	WV
6.43 /7.03	ERWIN	NC
	ROCK HILL	SC
	LEXINGTON	TN
6.445/7.045	HOPE MILLS	NC
	ROBBINSVILLE	NC
	ARLINGTON	VA
6.46 /7.06	CHARLOTTE	NC
	ELIZABETH CITY	NC
	MEMPHIS	TN
	SOUTH BOSTON	VA
	PRINCETON	WV
6.475/7.075	BURLINGTON	NC
6.625/6.025	MARTIN	TN
6.655/6.055	BROWNSVILLE	TN
6.685/6.085	WAVERLY	TN
6.715/6.115	PULASKI	TN
6.865/6.265	FAYETTEVILLE	TN
	HORNBEAK	TN
6.895/6.295	HARTWELL(GA)	SC
6.915/7.315	HENDERSONVILLE	TN
7.135/7.735	ALAMO	TN
7.255/6.835	LEXINGTON	SC
7.30 /7.90	MONROE	NC
7.60 /7.00	HIGH POINT	NC
	BLONTVILLE	TN
	CHATTANOOGA	TN
	CLARKSVILLE	TN
	HAYSI	VA
	TERRA ALTA	WV
7.615/7.015	CHARLOTTE	NC
	SUMTER	SC
	NASHVILLE	TN
	FREDRICKSBURG	VA
7.63 /7.03	GREENSBORO	NC
	ROANOKE RAPIDS	NC
	MYRTLE BEACH, N	SC
	FAYETTEVILLE	TN
	HENDERSONVILLE	TN
	MEMPHIS	TN
	MORRISTOWN	TN
	SPRINGFIELD	TN
	WAYNESBORO	VA
	MULLENS	WV
7.645/7.045	STAUNTON	VA
	VIRGINIA BEACH	VA
7.66 /7.06	MACO	NC
	GREENEVILLE	TN
	SHELBYVILLE	TN
	RICHMOND	VA
7.675/7.075	BURLINGTON	NC
	GREENVILLE	SC
	KNOXVILLE	TN
	STAUNTN/AFTON MT	VA
7.69 /7.09	GREENVL/ESTN NC	NC
	BLAIRSVILLE(GA)	SC
	ORANGEBURG	SC
	SPARTANBURG	SC
	MEMPHIS	TN
	SPARTA	TN
	GALAX/BRIRP MT	VA
7.705/7.105	MARION/OLD FORT	NC
	MONROE	NC
	JOHNSONS MT	VA
	BRIDGEPORT	WV
7.72 /7.12	GAST/SPCR MT	NC
	ROCKY MOUNT	NC
	MYRTLE BEACH	SC
	N. AUGUSTA	SC
	COLUMBIA	TN
	MEMPHIS	TN
	OAK RIDGE	TN
	CULPEPPER	VA
	BRIDGEPORT	WV
	DUNBAR	WV
7.735/7.135	BREVARD	NC
	CHERAW	SC
	GALAX	VA
7.75 /7.15	MORGANTON	NC
	RALEIGH	NC
	MONCKS CORNER	SC
	SIMPSONVILLE	SC
	MEMPHIS	TN

	NASHVILLE	TN
	OAK RIDGE	TN
	TAZEWELL	VA
	MCMECHEN	WV
7.765/7.165	GREENSBORO	NC
	GREENWOOD	SC
	HOHENWALD	TN
	NEWPORT NEWS	VA
	WARRENTON	VA
7.78 /7.18	MT AIRY	NC
	SANFORD	NC
	CAROWINDS	SC
	GOOSE CREEK	SC
	CLEVELAND	TN
	MEMPHIS	TN
	NASHVILLE	TN
	BARREN SPRINGS	VA
	PETERSBURG	VA
	LEON	WV
7.795/7.195	LAKE TOXAWAY	NC
7.81 /7.21	GREENSBORO	NC
	COLUMBIA	SC
	WEST BROW(GA)	SC
	COOKEVILLE	TN
	JACKSON	TN
	HIGH KNOB	VA
	MCLEAN	VA
7.825/7.225	HILLSBOROUGH	NC
	MORRISTOWN	TN
7.84 /7.24	CARTHAGE	NC
	EDEN	NC
	FOREST CITY	NC
	FRANKLIN	NC
	COLUMBIA	SC
	LANCASTER	SC
	GALLATIN	TN
	MEMPHIS	TN
	LYNCHBURG	VA
	PETERSBURG	VA
	WOODBRIDGE	VA
7.855/7.255	ASHEBORO	NC
	LUMBERTON	NC
	MARION	NC
	PARKSLEY	VA
	MARTINSBURG	WV
7.87 /7.27	BENSON	NC
	GASTONIA	NC
	WAYNESVILLE	NC
	CHARLESTON	SC
	LONG MT	SC
	SUMMERVILLE	SC
	GALLATIN	TN
	JOHNSON CTY	TN

	MEMPHIS	TN
	SAVANNAH	TN
	GUM SPRING	VA
	SCOTT DEPOT	WV
7.885/7.285	LYMAN	SC
	MARTINSVILLE	VA
7.90 /7.30	JACKSONVILLE	NC
	OXFORD	NC
	TUCKASEGEE	NC
	AIKEN	SC
	KNOXVILLE	TN
	MEMPHIS	TN
	NASHVILLE	TN
	BERRYVILLE	VA
	CLIFTON FORGE	VA
	FRANKLIN	VA
	HUNTINGTON	WV
7.915/7.315	UNION CROSS	NC
	CENTERVILLE	TN
	ALEXANDRIA	VA
7.92 /7.32	GRUNDY	VA
7.93 /7.33	FAYETTEVILLE	NC
	LENOIR	NC
	COLUMBIA	SC
	TOCCOA(GA)	SC
	COVINGTON	TN
	CROSSVILLE	TN
	KLMNRK/SALUDA	VA
	LEXNGTN/COLE MT	VA
7.945/7.345	SHELBY	NC
	GATE CITY	VA
	FRANKLIN	WV
7.95 /7.35	DANVILLE	VA
7.96 /7.36	BOONE	NC
	FRANKLIN	NC
	GREENVILLE	NC
	LUMBERTON	NC
	COLUMBIA	SC
	MEMPHIS	TN
	NASHVILLE	TN
	PARIS	TN
	PARKERSBURG	WV
7.975/7.375	BURNSVILLE	NC
	HILLSVILLE	NC
	NASHVILLE	TN
	HILLSVILLE	VA
	LYNCHBURG	VA
	NEWPORT NEWS	VA
	GRAFTON	WV
7.99 /7.39	CHARLOTTE	NC
	EDEN/STONEVILLE	NC
	SMITHFIELD	NC
	DAYTON/RHEA CTY	TN

	JONESBORO	TN
	MEMPHIS	TN
	NASHVILLE	TN
	PETERSBURG	VA

220 MHZ

2.22 /3.82	FALLS CHURCH	VA
2.30 /3.90	COLUMBIA	SC
2.32 /3.92	HIGH POINT	NC
2.34 /3.94	ASHVL/MT PISGAH	NC
	HILLSBOROUGH	NC
	FAIRFAX	VA
	SUFFOLK	VA
2.36 /3.96	ROCKY MOUNT	NC
2.38 /3.98	LINWOOD	NC
	NASHVILLE	TN
2.40 /4.00	LOCUST	NC
2.42 /4.02	FAYETTEVILLE	NC
	HICKORY	NC
	NASHVILLE	TN
2.44 /4.04	WINSTON-SALEM	NC
2.46 /4.06	EASLEY/SASFRS MT	SC
2.54 /4.14	PICKENS	SC
	HUNTINGTON	WV
2.70 /4.30	STATESVILLE	NC
2.74 /4.34	GALAX	VA
2.86 /4.46	KNOXVILLE	TN
3.00 /4.60	ASHEVILLE	NC
3.04 /4.64	RALEIGH	NC
	WINSTON-SALEM	NC
3.08 /4.68	CHARLOTTE	NC
3.10 /4.70	WINSTON-SALEM	NC
3.16 /4.76	SALISBURY	NC
	DAN/WHT OAK	VA
3.18 /4.78	CHATTANOOGA	TN
3.20 /4.80	CHRYVL/BKRS MT	NC
3.22 /4.82	GREENSBORO	NC
	ALEXANDRIA	VA
3.28 /4.88	WSTFLD/SAUTN MT	NC
3.30 /4.90	CHATTANOOGA	TN
3.34 /4.94	SYLVA	NC
	GREENEVILLE	TN
	LYNCHBURG	VA
3.36 /4.96	MORGANTON	NC

440 MHZ

9.25 /7.25	CHATTANOOGA	TN
9.25 /6.27	ALEXANDRIA	VA

2.25 /7.25	ROCK HILL	SC
2.50 /7.50	ROANOKE/POOR MT	VA
4.225/9.225	MANASSAS	VA
4.75 /9.75	FAIRFAX	VA
4.85 /9.85	ANNANDALE	VA
4.90 /9.90	WOODBRIDGE	VA
7.05 /2.05	MEDINA	TN
7.25 /2.25	COVINGTON	VA
	SOUTH BOSTON	VA
7.75 /2.75	ROANOKE	VA
7.80 /2.80	JACKSON	TN
	MEMPHIS	TN
7.90 /2.90	HIGH POINT	NC
8.40 /3.40	MEMPHIS	TN
8.50 /3.50	TYSONS CORNER	VA
8.75 /3.75	ALAMO	TN
9.00 /4.00	ARLINGTON	VA
9.05 /4.05	WAYNSBR/AFTON MT	VA
9.10 /4.10	HILLSBOROUGH	NC
9.10 /4.509	CHARLESTON	SC
9.10 /4.10	COLUMBIA	SC
9.15 /4.15	LEXNGTN/COLE MT	VA
9.25 /4.25	CHARLOTTESVILLE	VA
	PORTSMOUTH	VA
9.30 /4.30	KNOXVILLE	TN
	MEMPHIS	TN
	WAYNESBORO	VA
9.35 /4.35	LYNCHBURG	VA
9.40 /4.40	OAK RIDGE	TN
9.45 /4.45	LYNWOOD	NC
	GALLATIN	TN
	FALLS CHURCH	VA
9.50 /4.50	BRISTOL/HLSTN MT	TN
	KNOXVILLE	TN
	MEMPHIS	TN
	LYNCHBURG	VA
	PETERSBURG	VA
9.60 /4.60	ALEXANDRIA	VA
9.65 /4.65	GREENEVILLE	TN
9.70 /4.70	SALISBURY	NC
9.775/4.775	NASHVILLE	TN
9.80 /4.80	KINGSTON/LICK KB	WV
	MORGANTOWN	WV
9.85 /4.85	CHARLOTTE	NC
	PETERSBURG	VA
9.875/4.875	NASHVILLE	TN
9.90 /4.90	ASHVL/MT PISGAH	NC
	GREENSBORO	NC
9.95 /4.95	BENTON/BEAN MT	TN
	STAUNTON	VA
	VIRGINIA BEACH	VA
9.975/4.975	NASHVILLE	TN

WEST VIRGINIA REPEATERS

TWO METERS

ALDERSON	WR8AKZ	146.13	146.73	N	
BECKLEY	WD8POF	144.77	145.37	N	LA
BECKLEY	K8BO	146.34	146.94	D	O
BKLY/FLAT TOP MT	K8BO	146.25	146.85	D	A
BLUEFIELD	W8MOP	144.89	145.49		A
BLUEFIELD	WD8OGY	146.415	147.015	D	PA
BOLT MT	WB8LVH	144.57	145.17	N	L
BRIDGEPORT	WR8ALC	147.705	147.105	N	EA
BRIDGEPORT	K8VNQ	147.72	147.12		EAL
BUCKHANNON	K8WYH	146.25	146.85	N	
CHARLESTON	WR8AER	146.22	146.82	N	
CHARLESTON	WB8CQV	146.28	146.88	N	
CLARKSBURG	WB8ZVS	146.22	146.82	D	A
COAL MTN	WB8KAD	146.12	146.72	N	A
COTTAGEVILLE	WR8AKV	146.31	146.91	N	
DUNBAR	K8VKI	147.72	147.12		
ELKINS	WR8AOH	146.04	146.64	N	
FAIRMONT	W8JM	146.31	146.91	D	
FRANKLIN	W3RUA	147.945	147.345		
GRAFTON	K8VNQ	147.975	147.375	D	L
HUNTINGTON	WB8EZR	146.04	146.64	N	
HUNTINGTON	WR8AGH	146.16	146.76	N	A
HUNTINGTON	KA8BKX	147.90	147.30	N	
KINGSTON/LICK KB	W8FG	144.87	145.47		
LEON	WB8NMT	147.78	147.18	N	
LOGAN	WA8ZLR	146.09	147.11	N	
LOGAN	WR8ADD	146.37	146.97	N	
MADISON	KA8JYR	146.06	147.06	N	TA
MARTINSBURG	WB8VUZ	147.855	147.255	N	
MCMECHEN	WA8ULB	146.31	146.91		
MCMECHEN	N8CFX	147.75	147.15		
MORGANTOWN	K8LG	144.83	145.43		
MORGANTOWN	WB8YZT	146.085	147.955	N	
MORGANTOWN	W8CUL	146.16	146.76		
MULLENS	WR8AKX	147.63	147.03	N	LA
NEW MARTINSVLLE	WR8ABY	146.34	146.94	N	
OAK HILL	W8GH	146.19	146.79		A
PARKERSBURG	WD8AXY	146.37	146.97		PA
PARKERSBURG	WD8AXY	147.96	147.36		
PARSONS	K8VNQ	144.73	145.33		PA
PIE HORSE MT	N8APH	144.67	145.27	N	A
PRINCETON	WB8NRK	146.46	147.06		A
RAVENSWOOD	WA8USO	146.07	146.67	D	
RAVENSWOOD	WA8USO	146.10	146.70		R
RICHWOOD	K8VKB	146.34	146.94		
SCOTT DEPOT	K8SLI	147.87	147.27	N	A
SPENCER	WA8SAK	146.01	146.61	N	
ST ALBANS	WB8GDY	146.40	147.00		
TERRA ALTA	WB8PHU	147.60	147.00		PA
WEIRTON	KC8JN	146.34	146.94		
WELCH	WB8SXZ	144.85	145.45	D	
WHEELING	W8YFX	144.59	145.19	N	
WHEELING	W8JDH	146.16	146.76	N	

220 MHZ

HUNTINGTON	KA8BKX	222.54	224.14	N

440 MHZ

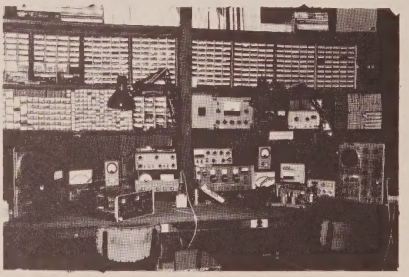
KINGSTON/LICK KB	KA8EMX	449.80	444.80	N
MORGANTOWN	W8CUL	449.80	444.80	

We have
the NEW
KDK

FM-2025A *mark II*

ASK ABOUT TRADES!!

The NEW KDK TT Mic (now INCLUDED with the FM 2025!) is available separately for use with earlier KDK's and is compatable with most two meter rigs. We also stock extra mounting brackets, power cords and other parts for KDK's!



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Give our service department a call. We would be happy to take a look at your rig. Need parts? Chances are we have what you need in stock. We keep a wide assortment of parts used in ham gear on hand.

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NORTH CAROLINA REPEATERS

TWO METERS

AHOSKIE	WB4YNF	144.53	145.13		A
AHOSKIE	WA4ZGQ	146.31	146.91		PA
ALBEMARLE	WA4LBT	146.385	146.985		
ANDSN MT/NEWTON	WD4LCF	144.85	145.45	D	
ASHEBORO	WD4AIB	147.855	147.255		PA
ASHEVILLE	WA4QCO	146.235	146.835		A
ASHVL/MT PISGAH	WA4BVW	146.16	146.76		
ASHVL/SPIVEY MT	WA4KNI	146.31	146.91		A
BENSON	WR4ARL	147.87	147.27	N	PA
BOONE	WA4KDB	147.96	147.36		
BREVARD	N4DJB	147.735	147.135		
BURGAW	K4LZY	146.34	146.94		
BURLINGTON	WR4AKY	146.07	146.67	N	
BURLINGTON	W4VGZ	146.475	147.075	D	EA
BURLINGTON	WA4HBQ	147.675	147.075	D	EA
BURNSVILLE	WA4LLR	147.975	147.375		A
CARTHAGE	W4NIW	147.84	147.24		EA
CHARLOTTE	W4BFB	144.63	145.23		
CHARLOTTE	WB4HTR	144.75	145.35	N	
CHARLOTTE	WR4AEU	146.34	146.94		
CHARLOTTE	WR4ALO	146.46	147.06	N	A
CHARLOTTE	WB4KPF	147.615	147.015		PA
CHARLOTTE	WB4KOH	147.99	147.39		PA
CHRYVL/BKRS MT	WB4UDS	144.55	145.15		
CONCORD/KANNAP.	K4CEB	146.055	146.655		A
DUNN	WB4FXM	146.10	146.70		
DURHAM	WA4WTX	146.22	146.82		
DURHAM	WA4BFT	146.34	146.94	N	A
EDEN	WA4ACP	147.84	147.24	N	
EDEN/STONEVILLE	WA4QBG	147.99	147.39		
ELIZABETH CITY	WA4VTX	146.46	147.06	N	A
ELIZABETHTOWN	N4DHW	146.175	146.775	N	
ERWIN	WR4ALY	146.43	147.03	N	
FAYETTEVILLE	WR4ANN	146.31	146.91		A
FAYETTEVILLE	W4LPL	147.93	147.33		
FISHER PEAK	WD4MDP	144.73	145.33	D	
FOREST CITY	W4TMT	146.07	146.67	N	A
FOREST CITY	WA4BKU	147.84	147.24	N	
FRANKLIN	WB4YAO	147.84	147.24		
FRANKLIN	N4AC	147.96	147.36	D	
GAST/SPCR MT	W4REW	147.72	147.12	D	A
GASTONIA	K4ZFD	146.205	146.805	N	L
GASTONIA	WD4KGM	147.87	147.27	N	
GOLDSBORO	K4CYP	146.25	146.85		A
GREENSBORO	N4AZM	144.65	145.25		
GREENSBORO	K4SNI	146.01	146.61		A
GREENSBORO	WR4AOD	146.16	146.76		
GREENSBORO	WD4IPZ	147.63	147.03	D	A
GREENSBORO	WR4AUA	147.765	147.165	N	
GREENSBORO	WR4ANL	147.81	147.21	N	
GREENVILLE	W4AMC	147.96	147.36		
GREENVL/ESTN NC	W4GDF	147.69	147.09		
GRIFTON	W4NBR	146.085	146.685		
GRIFTON	WR4ABP	146.16	146.76		O
HENDERSONVILLE	WB4YAO	146.04	146.64		L
HICKORY/BRT. MT	WR4ACM	146.25	146.85	N	
HIGH POINT	N4XO	144.51	145.11	N	C
HIGH POINT	KA4DHP	146.265	146.865		PA
HIGH POINT	K4AZA	146.40	147.00		LA
HIGH POINT	K4AZA	147.60	147.00		LA
HILLSBOROUGH	WA4WTX	147.825	147.225		A
HILLSVILLE	WD4BTS	147.975	147.375	N	A
HNDSNVL/PINCK MT	WA4KNI	144.67	145.27		
HOPE MILLS	WB4TRW	146.445	147.045	D	
JACKSONVILLE	WD4FVO	146.40	147.00		PA
JACKSONVILLE	WR4ATW	147.90	147.30	N	
KINGS MTN	WB4GXY	146.37	146.97	D	
LAKE TOXAWAY	WR4AGH	147.795	147.195	D	
LAURINBURG	K4QWK	146.025	146.625		
LENOIR	KN4K	147.93	147.33		
LEVEL CROSS/GBO	K4VUW	146.19	146.79		
LEXINGTON	K4IZM	146.31	146.91		PA
LILLINGTON	WA4FKI	144.87	145.47	N	
LINCOLNTON	WD4PLY	144.85	145.45	N	
LUMBERTON	KD4FI	147.855	147.255	N	RC
LUMBERTON	WR4BDQ	147.96	147.36		
MACO	WA4LED	147.66	147.06		
MANTEO	W4PCN	146.34	146.94		PA
MARION	WB4UCF	147.855	147.255	N	P
MARION/OLD FORT	KA4DEC	147.705	147.105		
MONROE	K4BGU	147.30	147.90	N	
MONROE	K4JCK	147.705	147.105		A
MORGANTON	K4RP	147.75	147.15		
MT AIRY	WA4ZAS	146.37	146.97		EA
MT AIRY	WA4CQK	147.78	147.18	N	
N. WILKESBORO	K4ITL	144.77	145.37	D	
NEW BERN	WD4JMS	146.01	146.61		A
NEWPORT	K4GRW	144.85	145.45		A
NEWTON	N4AWV	144.83	145.43	N	P
OXFORD	WA4JCS	147.90	147.30	N	CPA
RALEIGH	N4BEA	144.67	145.27		A
RALEIGH	N4BXF	144.89	145.49		PA
RALEIGH	W4DW	146.04	146.64		A
RALEIGH	K4BWC	146.13	146.73		A
RALEIGH	K4ITL	146.28	146.88	D	
RALEIGH	K4ITL	147.75	147.15	D	PA
REIDSVILLE	K4YFT	146.25	146.85	D	
ROANOKE RAPIDS	K4PUV	147.63	147.03		
ROARING GAP	WB4PZA	146.22	146.82		
ROBBINSVILLE	WB4ZQB	146.445	147.045	D	L
ROCKINGHAM	WA4ULA	146.355	146.955		
ROCKY MOUNT	WB4WAA	147.72	147.12		A
SALISBURY	W4EXU	146.13	146.73		
SANFORD	WB4EJJ	147.78	147.18	N	A
SHELBY	WD4DJA	146.28	146.88	D	
SHELBY	WD4DJA	147.945	147.345	D	A
SIMPSONVILLE	WA4PPV	144.79	145.39	N	P
SMITHFIELD	WR4BBO	146.37	146.97		A
SMITHFIELD	KD4YU	147.99	147.39	N	P
SPRING LAKE	WR4BCA	146.115	146.715	N	
STATESVILLE	AI4O	146.085	146.685	D	PA
TUCKASEGEE	W8OMV	147.90	147.30	N	
UNION CROSS	WA4RBW	147.915	147.315		A
WADESBORO	W4USH	146.235	146.835	N	
WASHINGTON	WB4GMI	146.205	146.805	N	
WAYNESVILLE	N4SM	147.87	147.27		PA
WILLIAMSTON	WA4TKJ	144.81	145.41	N	
WILMINGTON	WR4AVF	146.13	146.73		
WILMINGTON	WR4AHL	146.22	146.82		O
WIN-SAL/SAUTN MT	WB4KQN	144.79	145.39		L
WINSTON-SALEM	WA4GIC	146.04	146.64	D	A

220 MHZ

ASHEVILLE	NC4N	223.00	224.60		
ASHVL/MT PISGAH	WA4BVW	222.34	223.94		
CHARLOTTE	WB4KPF	223.08	224.68		LA
CHRYVL/BKRS MT	WB4UDS	223.20	224.80	D	
FAYETTEVILLE	W4EHF	222.42	224.02	D	
GREENSBORO	KZ4O	223.22	224.82	N	RL
HICKORY	WR4ACM	222.42	224.02	N	
HIGH POINT	K4AZA	222.32	223.92		LA
HILLSBOROUGH	WA4WTX	222.34	223.94		L
LINWOOD	KA4HEV	222.38	223.98	N	
LOCUST	WA4ZIA	222.40	224.00		
MORGANTON	WB4PML	223.36	224.96		
RALEIGH	WA4PEN	223.04	224.64	N	
ROCKY MOUNT	KA4DAP	222.36	223.96	N	
SALISBURY	W4EXU	223.16	224.76		
STATESVILLE	WA4WRS	222.70	224.30	N	
SYLVA	KA4V	223.34	224.94	N	

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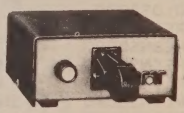

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WINSTON-SALEM	WB4UGW	222.44	224.04	N	C
WINSTON-SALEM	WA4YHH	223.04	224.64	N	
WINSTON-SALEM	WA4GIC	223.10	224.70	D	R
WSTFLD/SAUTN MT	W4RXG	223.28	224.88		

440 MHZ

ASHVL/MT PISGAH	WA4COS	449.90	444.90	N	
CHARLOTTE	WR4ALO	449.85	444.85	N	
GREENSBORO	WB4HZI	449.90	444.90	N	
HIGH POINT	K4AZA	447.90	442.90		L
HILLSBOROUGH	WA4WTX	449.10	444.10		
LYNWOOD	KA4HEV	449.45	444.45	N	P
SALISBURY	W4EXU	449.70	444.70		C

SIX METERS

CARY	WR4AVP	52.35	53.35	N	
HENDERSONVILLE	WB4YAO	52.01	53.01		
HENDERSONVILLE	WB4YAO	52.525	52.525		RB
HICKORY	WR4ACM	52.47	53.47	N	
HIGH POINT	K4AZA	52.15	53.15		L
HILLSBOROUGH	WA4WTX	52.525	52.525		RB
NEWPORT	K4GRW	52.01	53.01		P
RALEIGH	K4ITL	52.05	53.05	N	

SOUTH CAROLINA REPEATERS

TWO METERS

AIKEN	N4ADM	147.90	147.30		
ANDERSON/LOCAL	WR4AIO	146.37	146.97		PA
ANDSN/SASFRAS MT	WR4AIO	146.19	146.79		
BAMBERG	WA4DFP	144.73	145.33	N	
BEAUFORT	WR4	146.01	146.61	N	
BLAIRSVILLE(GA)	WA4EZN	147.69	147.09	D	LEA
CAROWINDS	WR4ABK	147.78	147.18	N	
CHARLESTON	K4LWS	146.06	146.66	N	
CHARLESTON	K4ILT	146.16	146.76	N	PA
CHARLESTON	W4IVE	146.34	146.94	N	T
CHARLESTON	WR4BCP	147.87	147.27	D	A
CHELSEA	KB4GY	146.01	146.61	D	
CHERAW	WD4HEH	147.735	147.135		
COLUMBIA	N4EOY	146.07	146.67		
COLUMBIA	WB4OCB	146.16	146.76		
COLUMBIA	K4LNU	146.34	146.94		
COLUMBIA	K4AVU	147.81	147.21		
COLUMBIA	N4CZR	147.84	147.24	D	
COLUMBIA	WB4VLY	147.93	147.33	D	
COLUMBIA	K4LNU	147.96	147.36		A
DILLON/PEE DEE	NN4N	146.145	146.745		
FLORENCE	W4ULH	146.25	146.85		
FLORENCE	WA4ISM	146.37	146.97		PA
GASTON/COL.	WB4NEP	144.61	145.21		EA
GOOSE CREEK	W4NAT	147.78	147.18	N	
GREENVILLE	W4AZT	146.10	146.70		A
GREENVILLE	WR4	147.675	147.075	N	PA
GREENWOOD	WB4UGA	147.765	147.165		PA
GREER	W4IQQ	146.34	146.94	N	
GRNVLE/CSRS HD	W4NYK	146.01	146.61		
GRNVLE/PARIS MT	W4NYK	146.22	146.82		PA
HARTWELL(GA)	KY4T	146.895	146.295	D	
HODGES/GREENWOOD	KB4YF	144.53	145.13		
LANCASTER	W4PAX	146.10	146.70		
LANCASTER	WB4BGF	147.84	147.24		
LAURENS	WA4UZA	146.25	146.85	N	A
LEXINGTON	WR4AGK	147.255	146.835	N	
LONG MT	WA4JRJ	147.87	147.27	N	
LYMAN	KS4I	147.885	147.285		
MARION	W4YLT	146.40	147.00		EA
MONCKS CORNER	WA4DDK	147.75	147.15	N	A
MYRTLE BEACH	WD4JMT	146.01	146.61		A
MYRTLE BEACH	WA4YEE	147.72	147.12	N	
MYRTLE BEACH, N	WA4JYR	147.63	147.03	D	PA
N. AUGUSTA	K4FKJ	146.13	146.73		
N. AUGUSTA	WR4ALS	147.72	147.12	N	
NORTHWEST SECT.	W4GZL	144.51	145.11	D	P
ORANGEBURG	WR4AQY	147.69	147.09	N	A
PICKENS	WB4YXZ	146.40	147.00		A
ROCK HILL	WR4	144.71	145.31	N	
ROCK HILL	WC4ABD	146.43	147.03		PA
SAVANNAH(GA)	W4HBB	146.28	146.88		
SAVANNAH(GA)	W4HBB	146.37	146.97		A
SIMPSONVILLE	WD4BJY	146.13	146.73		A
SIMPSONVILLE	WA4SDT	147.75	147.15	N	R
SPARTANBURG	K4JLA	147.69	147.09	N	PA
SUMMERVILLE	WR4AUV	146.19	146.79	N	
SUMMERVILLE	WB4LET	147.87	147.27	N	EA
SUMTER	WR4AOI	146.04	146.64		
SUMTER	WA4UMU	147.615	147.015		A
TOCCOA(GA)	KA4DIP	147.93	147.33		
WEST BROW(GA)	KC4EV	147.81	147.21		
WHITE HALL	WR4AQL	146.31	146.91	N	

220 MHZ

COLUMBIA	N4EOY	222.30	223.90	O
FASLEY/SASFRS MT	KJ4X	222.46	224.06	
PICKENS	WB4QHF	222.54	224.14	

440 MHZ

CHARLESTON	N4SC	449.10	444.509	N	T
COLUMBIA	KC4YI	449.10	444.10		
ROCK HILL	KA4RFA	442.25	447.25	D	

TENNESSEE REPEATERS

TWO METERS

ALAMO	WB4EDS	147.135	147.735	N	
ALTAMONT	WR4AWN	146.37	146.97	N	
ATHENS	WB4GRC	144.71	145.31	N	C
BENTON	K4SIR	144.85	145.45	N	
BLONTVILLE	WA4KMG	147.60	147.00		PA
BRISTOL	K4ILW	146.07	146.67	D	A
BRISTOL	W4SZP	146.28	146.88		A
BRISTOL/HLSTN MT	WR4ADO	146.16	146.76		
BROWNSVILLE	WA4ABU	146.655	146.055	N	A
CENTERVILLE	WB4PZB	147.915	147.315	N	
CHATTANOOGA	KB4TZ	144.79	145.39	D	A
CHATTANOOGA	K4CMY	146.01	146.61	D	
CHATTANOOGA	W4DSK	146.19	146.79	D	A
CHATTANOOGA	WA4ZOK	147.60	147.00		PA
CLARKSVILLE	WA4TEQ	147.60	147.00	N	
CLEVELAND	WR4AQV	147.78	147.18	N	
COLUMBIA	WR4AIX	147.72	147.12	N	
COOKEVILLE	WR4ANW	146.07	146.67	N	
COOKEVILLE	N4WS	147.81	147.21	D	
COVE MTN/GTLBG	WA4KJH	146.25	146.85		
COVINGTON	WA4VXW	147.93	147.33	N	
CROSSVILLE	WR4AKQ	146.04	146.64	N	

CVRA REPEATER SYMBOLS

Unmarked in First Code column-Full CVRA Members

N	NON Member CVRA	RB	Remote Base System
D	Delinquent Member	T	Tone Access Repeater
M	T-MARC Repeater	L	Linked Repeater
A	Open Autopatch	R	Radioteletype Rptr.
PA	Private Autopatch	V	Television (SS or ATV)
EA	Emerg. Autopatch	P	Proposed Repeater
		C	Under Construction
		O	Off Air Temporarily

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CROSSVILLE	WR4BEL	147.93	147.33	N	
DAYTON/RHEA CTY	K4ZLA	147.99	147.39	N	
DYERSBURG	AA4HF	146.145	146.745	N	
FAYETTEVILLE	KO4G	146.865	146.265	N	C
FAYETTEVILLE	WR4BAQ	147.63	147.03	N	
FISHERVILLE	N4DRL	144.65	145.25	N	A
GALLATIN	WB4DLQ	147.84	147.24	N	
GALLATIN	WA4YQC	147.87	147.27	D	
GREENEVILLE	W4ANB	146.10	146.70	D	
GREENEVILLE	WA4LYF	147.66	147.06		A
GREENEVILLE	WB4TUO	144.81	145.41	N	
HENDERSONVILLE	WB4ZCK	146.915	147.315	N	RB
HENDERSONVILLE	N4WF	147.63	147.03	N	
HOHENWALD	WB4LHV	147.765	147.165	N	
HORNBEAK	WA4OXK	146.865	146.265	N	
JACKSON	W4WKZ	147.81	147.21	N	
JOHNSON CITY	WB4IKB	146.19	146.79		
JOHNSON CITY	KE4FH	147.87	147.27		A
JONESBORO	WB4SQC	147.99	147.39		PA
KNGSPT/BAYS MT	W4TRC	146.37	146.97		A
KNOXVILLE	WB4JSD	144.51	145.11	D	R
KNOXVILLE	WA4KAV	144.55	145.15		
KNOXVILLE	K4KFD	144.61	145.21	D	A
KNOXVILLE	WA4TEM	144.73	145.33		A
KNOXVILLE	WB4GBI	144.87	145.47		
KNOXVILLE	WB4IOB	146.13	146.73		
KNOXVILLE	K4HXD	146.34	146.94		
KNOXVILLE	K4HXD	147.675	147.075		A
KNOXVILLE	W4BBB	147.90	147.30		
LAFOLLETTE	W4TZG	146.07	146.67		
LAKE CITY	WB4OAH	146.22	146.82	N	
LEBANON	WR4BBM	146.13	146.73	N	
LEXINGTON	WB4LGH	146.43	147.03	N	
LOUDON	WD4HQI	144.57	145.17	D	
MADISON	WB4NTM	146.04	146.64	N	
MANCHESTER	WR4ACI	146.10	146.70		A
MARTIN	WA4ZQX	146.625	146.025	N	
MCMINVL/SHT MT	W4KKO	144.89	145.49		
MEDINA	K4BEZ	146.37	146.97	N	AL
MEMPHIS	WR4AZK	144.89	145.49		
MEMPHIS	WB4MQD	145.33	PACKET	N	
MEMPHIS	W4GYS	146.04	146.64	N	
MEMPHIS	WR4AOG	146.10	146.70	N	R
MEMPHIS	WR4AGR	146.13	146.73	N	
MEMPHIS	WR4ABS	146.19	147.51	N	
MEMPHIS	WR4AHO	146.22	146.82	N	
MEMPHIS	WR4AZK	146.25	146.85		A
MEMPHIS	WA4ETE	146.28	146.88	N	A
MEMPHIS	K4BN	146.34	146.94	N	A
MEMPHIS	K4FZJ	146.40	147.00	N	
MEMPHIS	WR4AXF	146.46	147.06	N	
MEMPHIS	WR4BCU	147.63	147.03	N	
MEMPHIS	WR4AWT	147.69	147.09	N	
MEMPHIS	WA4ETE	147.72	147.12	N	AT
MEMPHIS	WR5AII	147.75	147.15	N	
MEMPHIS	WR4AZK	147.78	147.18		
MEMPHIS	WD4APK	147.84	147.24	N	
MEMPHIS	WR4AZC	147.87	147.27	N	
MEMPHIS	WR4ASF	147.90	147.30	N	
MEMPHIS	WR4ATA	147.96	147.36	N	
MEMPHIS	WR4ASR	147.99	147.39	N	
MORRISTOWN	WB4OAH	147.63	147.03	N	
MORRISTOWN	WB4OAH	147.825	147.225	N	
MOUNTAIN CITY	WD4OMO	144.87	145.47	N	
MURFREESBORO	WB4LHO	144.57	145.17	N	
NASHVILLE	WB4HTX	144.83	145.43		
NASHVILLE	WA4PCD	146.01	146.61	N	
NASHVILLE	WB4NTM	146.07	146.67	N	
NASHVILLE	WB4QES	146.16	146.76	N	
NASHVILLE	WR4AFA	146.19	146.79		
NASHVILLE	N4TK	146.25	146.85	N	
NASHVILLE	WB4QES	146.28	146.88	N	
NASHVILLE	WA4PCD	146.34	146.94	N	
NASHVILLE	AF4K	147.615	147.015	N	
NASHVILLE	WB4JVP	147.75	147.15	N	
NASHVILLE	WA4PCD	147.78	147.18	N	
NASHVILLE	WB4ZSA	147.90	147.30		A
NASHVILLE	WB4NTM	147.96	147.36	N	
NASHVILLE	WB4JTN	147.975	147.375	N	
NASHVILLE	WB4DLQ	147.99	147.39	N	
OAK RIDGE	W4SKH	146.28	146.88		
OAK RIDGE	W4SKH	146.37	146.97		A
OAK RIDGE	K4EAJ	147.72	147.12		L
OAK RIDGE	K4EAJ	147.75	147.15		R
PARIS	K4KLX	147.96	147.36	N	
PIKEVILLE(KY)	KA4BQH	144.59	145.19		
PULASKI	W4JVO	146.715	146.115	N	
SAVANNAH	WA4TPA	144.77	145.37	N	
SAVANNAH	WB4DQU	146.31	146.91	N	
SAVANNAH	WA4TPA	147.87	147.27	N	
SHELBYVILLE	WR4AQM	147.66	147.06	N	
SHORT MT/SMTHVL	W4YXA	146.31	146.91		
SPARTA	W4BSA	147.69	147.09		A
SPRINGFIELD	WR4AGH	147.63	147.03	N	
STANTONVILLE	WA4TPA	144.79	145.39	N	
UNION CITY	WR4AUQ	146.10	146.70	N	
WAVERLY	NO4Q	146.685	146.085	N	
WINCHESTER	WR4AFH	146.22	146.82		

220 MHZ

CHATTANOOGA	K4VCM	223.18	224.78	D	A
CHATTANOOGA	WA4ZOK	223.30	224.90		
GREENEVILLE	WB4NKM	223.34	224.94		A
KNOXVILLE	WA4YON	222.86	224.46		
NASHVILLE	WB4ZSA	222.38	223.98		A
NASHVILLE	N4DKA	222.42	224.02	N	

440 MHZ

ALAMO	WB4EDS	448.75	443.75	N	L
BENTON/BEAN MT	K4SIR	449.95	444.95	N	C
BRISTOL/HLSTN MT	WR4ADO	449.50	444.50		
CHATTANOOGA	WA4ZOK	439.25	427.25		V
GALLATIN	WD4KWP	449.45	444.45		
GREENEVILLE	WB4NKL	449.65	444.65		
JACKSON	WB4EPG	447.80	442.80	N	
KNOXVILLE	K4HXD	449.30	444.30		
KNOXVILLE	KB4NK	449.50	444.50		
MEDINA	K4BEZ	447.05	442.05	N	AL
MEMPHIS	WA4QWW	447.80	442.80	N	
MEMPHIS	WB4BDO	448.40	443.40	N	A
MEMPHIS	WD4APK	449.30	444.30	N	
MEMPHIS	WA4FNL	449.50	444.50	N	A
NASHVILLE	N4TK	449.775	444.775	N	
NASHVILLE	WB4THG	449.875	444.875	N	
NASHVILLE	WB4QES	449.975	444.975	N	
OAK RIDGE	K4EAJ	449.40	444.40		L

SIX METERS

CHATTANOOGA	WB4LRD	52.01	53.01	N	
KNOXVILLE	WB4IOB	52.15	53.15		
KNOXVILLE	WA4YON	52.64	53.64		
KNOXVILLE	K4HXD	52.76	52.525		
MEMPHIS	WR4AZK	52.01	53.01		

10 METERS

KNOXVILLE	K4HXD	29.56	29.66		C

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VIRGINIA REPEATERS

TWO METERS

ALEXANDRIA	WD4PDP	146.055	146.655	M	
ALEXANDRIA	W4HFH	147.915	147.315	M	
ALTAVISTA	WA4ISI	146.055	146.655	D	
ARLINGTON	WA4YVN	146.445	147.045	M	
BARREN SPRINGS	WR4AFQ	146.07	146.67		
BARREN SPRINGS	K4HZS	147.78	147.18		
BERRYVILLE	WR4APE	147.90	147.30	M	
BLACKSBURG	WA4YRJ	146.115	146.715	D	
BLAND	N4AZJ	144.75	145.35	N	
BLUEFIELD	W8MOP	144.89	145.49	D	A
BLUEFIELD	WD8OGY	146.415	147.015	D	PA
BRISTOL	K4ILW	146.07	146.67	D	A
BRISTOL	W4SZP	146.28	146.88		
BROMLEY MT	WR4ATJ	146.01	146.61		
CHARLOTTESVILLE	WA4TFZ	146.16	146.76		
CHARLOTTESVILLE	WA4TFZ	146.325	146.925		
CHESAPEAKE	N4SD	146.19	146.79		
CLIFTON FORGE	K4QEL	147.90	147.30	N	
COVINGTON	WB4CAV	146.22	146.82	N	
CULPEPPER	WR4BCS	147.72	147.12	M	
DANVILLE	K4WQS	146.10	146.70		
DANVILLE	WR4AHG	147.95	147.35	N	
DANVILLE(DCC)	WB4GJG	146.325	146.925		
FAIRFAX	W4LBL	146.19	146.79	D	PA
FAIRFAX	K4VYN	146.31	146.91	D	PA
FALLS CHURCH	W4AQD	144.75	145.35	M	
FARMVILLE	WB4NWP	146.31	146.91	D	A
FINCASTLE	W4WIC	146.04	146.64		
FOREST	K4STE	146.16	146.76		EA
FRANKLIN	K4SPS	147.90	147.30	N	PA
FREDRICKSBURG	WB4LNT	147.615	147.015	N	
GALAX	WA4ZIV	144.83	145.43	N	
GALAX	WA4DFH	147.735	147.135		
GALAX/BRIRP MT	WR4AHR	147.69	147.09		
GATE CITY	WD4GTA	147.945	147.345	N	
GRUNDY	K4HWQ	147.92	147.32	N	A
GUM SPRING	KB4GX	147.87	147.27	D	
HAMPTON	WR4ALW	146.13	146.73		
HAMPTON	WR4AFT	146.34	146.94	N	T
HAYSI	WR4AWR	147.60	147.00	N	
HAZEL MT	WD4CYZ	146.235	146.835	N	
HIGH KNOB	K4AXO	147.81	147.21		
HILLSVILLE	WD4BTJ	147.975	147.375		A
JOHNSONS MT	WB4JBJ	147.705	147.105	D	LR
JONESVILLE	WA4OVC	146.31	146.91		
KLMNRK/SALUDA	WA4UAF	147.93	147.33		
LEBANNON	N4ATT	144.61	145.21	N	C
LEXINGTON	WA4WBD	146.07	146.67		
LEXNGTN/COLE MT	K4PQD	144.71	145.31	N	
LEXNGTN/COLE MT	K4PQD	147.93	147.33	N	
LYNCHBURG	WR4AXO	146.01	146.61	N	
LYNCHBURG	WA4RTS	146.34	146.94	N	
LYNCHBURG	K4QKR	147.84	147.24	N	L
LYNCHBURG	W4OSH	147.975	147.375		PA
MANASSAS	WD4JCE	144.67	145.27	M	R
MANASSAS	W1CRO	146.37	146.97		PA
MARION	N4BIW	146.04	146.64		EA
MARTINSVILLE	AB4L	147.885	147.285		
MCLEAN	WD4IWG	147.81	147.21	M	R
NEW MARKET	WR4ATG	146.025	146.625	M	
NEWPORT NEWS	WB4CTF	147.765	147.165	N	C
NEWPORT NEWS	WA4OHX	147.975	147.375	N	AC
NORFOLK	WB4LJM	146.10	146.70		
PARKSLEY	WA4TVS	147.855	147.255	N	C
PETERSBURG	K4SII	147.78	147.18	N	
PETERSBURG	K4ARO	147.84	147.24		PA
PETERSBURG	K4ARO	147.99	147.39		
PORTSMOUTH	N4PR	146.25	146.85	N	
RICHMOND	W4SQT	144.83	145.43		C
RICHMOND	WB4QEY	146.04	146.64		
RICHMOND	WR4ACW	146.28	146.88	N	PA
RICHMOND	W4ZA	146.34	146.94		T
RICHMOND	WA4ECM	147.66	147.06	N	
RIPPLEMEADE	K4TUE	146.31	146.91		
ROANOKE	WB4QOJ	146.145	146.745	N	L
ROANOKE	WR4AHT	146.34	146.94	N	AO
ROANOKE/POOR MT	W4CA	146.385	146.985		L
SALEM	W4PDL	146.28	146.88	N	
SOUTH BOSTON	WR4AYU	146.46	147.06	D	O
STAUNTN/AFTON MT	W4PNT	147.675	147.075	N	LR
STAUNTON	WA4ZBP	146.25	146.85		
STAUNTON	W4WRN	147.645	147.045	N	
STERLING	WA4TXE	146.115	146.715	M	
SUFFOLK	WR4AKS	146.40	147.00	N	PA
TAZEWELL	WD4DZE	147.75	147.15	N	
VIRGINIA BEACH	WA4KXV	146.37	146.97		A
VIRGINIA BEACH	WA4SBC	147.645	147.045	N	
WARRENTON	WB4FJT	147.765	147.165	M	
WAYNESBORO	W4BLD	147.63	147.03		
WILLIAMSBURG	W4NTG	146.07	146.67	N	
WINCHESTER	W4RKC	146.22	146.82	D	EA
WOODBRIDGE	WB4FQR	147.84	147.24	M	A
WYTHVL/SAND MT	WA4EMS	146.175	146.775		

220 MHZ

ALEXANDRIA	WA4CCF	223.22	224.82	M	
DAN/WHT OAK	K4OAK	223.16	224.76	N	
FAIRFAX	K4GCM	222.34	223.94	D	
FALLS CHURCH	N4CHP	222.22	223.82	M	
GALAX	WA4DFH	222.74	224.34		
LYNCHBURG	WB4DBB	223.34	224.94		C
SUFFOLK	WA4JUO	222.34	223.94	N	C

440 MHZ

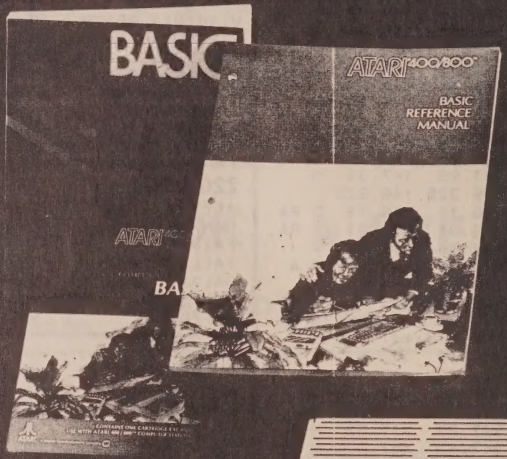
ALEXANDRIA	WR4AAG	439.25	426.27	M	V
ALEXANDRIA	W4HFH	449.60	444.60	M	
ANNANDALE	WR4AQG	444.85	449.85	M	PL
ARLINGTON	K8ZOA	449.00	444.00	M	L
CHARLOTTESVILLE	WA4TFZ	449.25	444.25		
COVINGTON	WB4CAV	447.25	442.25	N	
FAIRFAX	K4JYF	444.75	449.75	D	
FALLS CHURCH	WB8CRK	449.45	444.45	M	L
FINCASTLE	W4WIC	448.75	443.75		
LEXNGTN/COLE MT	K4PQD	449.15	444.15	N	
LYNCHBURG	WB4DBB	449.35	444.35		L
LYNCHBURG	K4HEX	449.50	444.50	N	RB
MANASSAS	WD4JCE	444.225	449.225	M	L
PETERSBURG	K4ARO	449.50	444.50		
PETERSBURG	K4ARO	449.85	444.85		
PORTSMOUTH	K4MLY	449.25	444.25	N	
ROANOKE	WR4AFE	447.75	442.75	N	
ROANOKE/POOR MT	W4CA	442.50	447.50		L
SOUTH BOSTON	WB4YWH	447.25	442.25	N	C
STAUNTON	W4WRN	449.95	444.95	N	C
TYSONS CORNER	WB6GUS	448.50	443.50	M	
VIRGINIA BEACH	WA4KXV	449.95	444.95		
WAYNESBORO	W4BLD	449.30	444.30		PA
WAYNSBR/AFTON MT	W4BLD	449.05	444.05		
WOODBRIDGE	WB4FQR	444.90	449.90	M	

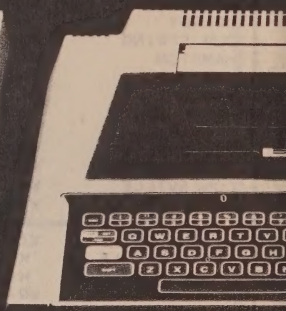
SIX METERS

ABINGTON	WR4ATJ	52.01	53.01	M	L
ALEXANDRIA	WA4CCF	52.13	53.13	M	P
DANVILLE(DCC)	WB4GJG	52.13	53.13		
FAIRFAX	KA4DCS	52.58	52.48	M	
LEXNGTN/COLE MT	K4PQD	52.01	53.01	N	L
LYNCHBURG	WB4DBB	52.15	53.15		
NORFOLK	W4NV	53.525	52.525	N	
NORTN/HIGH KB	K4LSP	52.01	53.01		
SOUTH BOSTON	WB4YWH	52.07	53.07	N	C

THE PROGRAMMER™

The Programmer helps you personalize your Basic Computer by teaching you to write your own programs. In fact, you can learn to write your own game programs! And you can write programs to solve business and science problems or even play computer music. The Programmer includes an ATARI BASIC Computing Language cartridge, the ATARI BASIC Reference Manual and the ATARI BASIC Self-Teaching Guide that teaches you how to program step-by-step. BASIC stands for Beginners' All-purpose Symbolic Instruction Code, and is designed to be easy to learn.





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*Estimated availability third quarter 1981.
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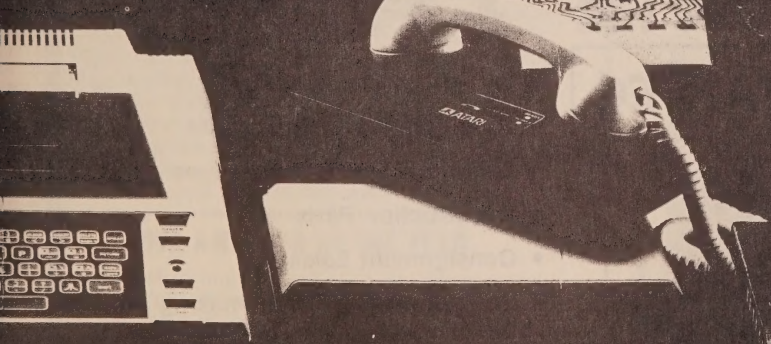
ATARI ACCESSORIES

Because the ATARI 400 Computer System has been designed to be used by just about anyone, the additional equipment and accessories have been designed to make the system completely flexible. A program recorder, printer, acoustic modem, interface module and controllers are all available. All expand the capabilities of The Basic Computer and all are easy to use and easy to afford.



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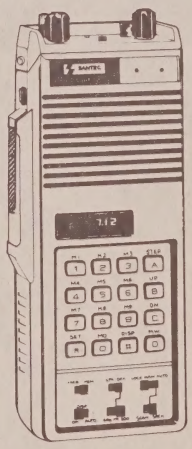


A PROFILE ON MATT KIRBY

Continued From Page 9

DAVE WA4PYZ smiles for the camera, as Sam WB4HAP makes some adjustments behind the cabinet of the 13-73 Knoxville repeater. Dave is one-third owner of the machine.

with a handheld had to try their skill at controlling the chair, (with Matt still in it!!). They had Matt all over the parking lot, inside knocking down chairs and chasing other hams. It was quite a spectacle.

Matt has his mischievous side and recently during halloween, he built up a ghost in his wheelchair with a pumpkin head. It was a scary looking varmint! He also put a cassett tape player inside the ghost, playing some of the Walt Disney Haunted House music. Matt hid in the bushes with his IC2-AT and chased the goblins all over the neighborhood with that ghost mobile.

Back in 1975, Matt invisioned his own two-meter repeater. He and close friend John Beckner, WB4FEN put their heads together and with the help of other hams put WR4APU, 13-73 on the air in the Spring of 1976 from Copper Ridge about 12 miles North of Knoxville.

To make a long story short, the VHF Engineering machine has grown up into a Motorola Micor and now lives on English Mountain near Newport, Tenn. with the antenna at 3,700 feet. The machine is one of the most home-brewed in East Tennessee, including the duplexer and antenna. Even the tower is a salvaged AM broadcast antenna that fell from lack of maintenance. Due to the dependability and long-range performance the WB4IOB repeater has become one of the most popular in East Tennessee. The recently installed 6-meter machine WB4IOB on 52.15-53.15 is on the road to becoming another popular machine.

Matt wants to say many thanks to the numerous hams and friends who have helped been his "hands" on the repeaters. He invites everyone to the Greater Knoxville Hamfest in May and to the World's Fair.

When this author reflects on the many enjoyable times spent with Matt, I can only think of the line of a popular song a few years back . . . "He ain't heavy, he's my brother!"

—by Sam Kirby, WB4HAP

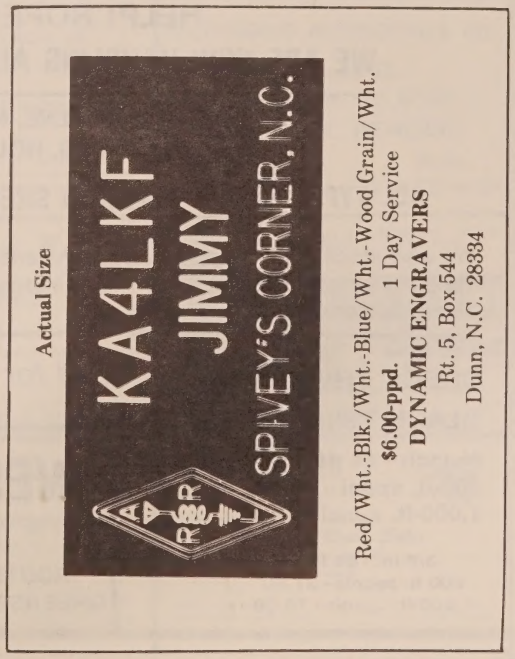
OVH AMATEUR OF THE YEAR

Bill Underwood, WD4KLG was unamimously voted the Ole Virginia Hams ARC "Ham Of The Year" at a recent meeting. The prestigeous award is presented to some outstanding club member each year by the Manassas, Virginia group.

Bruce Keller, WD4ODM, at the presentation, recounted Bill's record of service and assistance to the club, and his dependability for showing up wherever and whenever needed.

The OVH club which meets every 3rd Monday have the following officers for 1982: Herb Plummer, W4PJP, Pres.; Gary McGaughey, WB4YBD, VP; Bill Killmer, WB4KFU, Sec.; and Monte Smith, KC4HX, Treas.

The club operates the 37-97 W1CRO/R repeater in Manassas with Art Whittum trustee of the machine. Their annual Manassas hamfest will be held the first Sunday in June.



LEAGUE PLANNING MEETING — 1982

The Roanoke Division of the American Radio Relay League will hold a League Planning Meeting in Raleigh, NC, May 22 & 23, 1982. LPM-82 will be co-sponsored by the Raleigh ARS and the Cary ARC. The LPMs have been held in various places around the Roanoke Division for a number of years. The meetings are working sessions for ARRL appointees and interested ARRL members to discuss concerns and ideas for improvement in the Division. Some ARRL notables will be attending to both convey the present "thinking" of Headquarters and to gather input on the "sense" of the grass roots membership. There will be meetings on Saturday afternoon and Sunday morning. A banquet is scheduled for Saturday evening. Rooms should be booked well in advance for best rates. Details about the meetings, the banquet, room rates, etc., write: LPM — 82, c/o Raleigh ARS, P.O. Box 17124, Raleigh, NC 27619.

OAK RIDGE HAMFEST APRIL 3-4

The Oak Ridge ARC announces their annual Hamfest on April 3-4 at the Oak Ridge, Tenn. Civic Center. Talk-in is on 28-88 with backup on 72-12 and 52 simplex. Inside heated flea market and dealer booths. Many local attractions available including museums, shopping, camping, mountains and lakes. For information write: ORARC, Attn: Hamfest Committee, P.O. Box 291, Oak Ridge, Tn. 37830

Repeater Journal Public Service Notice

STATION OF KA4HCZ — FOR SALE

Yaesu FT-207-R with extra battery back - $210.00 YAESU PA-2 Mobile charge - $30.00. YAESU FT-227R FM Transceiver - $190.00 FP-4 Yaesu 4 amp P.S. - $35.00 OMNI C (Series D) HF transceiver, with deluxe P.S. incl. speaker - $1,000.00. Drake W4 HF Watt meter - $50.00. REALISTIC DX-160 G.C. Receiver - $160.00. TEI Electronic Mod. 19-9, 22 range multimeter - $60.00.

All equipment in absolute mint condition, some used very little. All prices are firm. F.O.B. Knoxville, Tenn.

Sale arranged and conducted by: RAY ADAMS, N4BAQ, 5833 Clinton Hwy. Suite 203, Knoxville, Tenn. 37912, or phone evenings: (615) 687-5410.

(Due to malignant diagnosis and terminal condition of KA4HCZ, the family has requested sale of all his Amateur equipment and is being conducted as a courtesy by Ray Adams)

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1982 FULL MEMBERS – LATECOMERS

The following repeaters got their 1982 membership applications in just in time to be listed as full members in this issue of the Journal. These were in too late to be listed in the Honor Roll, but we want to recognize them anyway, for getting their memberships in to us before Journal deadline. (listing in order of arrival, by city, by state and call. Number indicates more than one repeater per membership)

STOP THE PRESSES — PUT THESE ON

Florence, S.C. WA4ISM
Aiken, S.C. N4ADM
Manteo, N.C. W4PCN
Morganton, N.C. WB4PML
Greensboro, N.C. N4AZM
Franklin, N.C. WB4YAO (4)
Raleigh, N.C. W4DW
Hillsborough, N.C. WA4WTX (5)
Roanoke Rapids, K4PUV
Lumberton, N.C. WR4BDQ
Dunn, N.C. WB4FXM
Blountville, Tn. WA4KMG
Knoxville, Tn. K4HXD (5)
Jonesville, Va. WA4OVC
Forest, Va. K4STE
Weirton, W.Va. KC8JN
Jonesboro, Tn. WB4SQC
Winchester, Tn. WR4AFH
Manchester, Tn. WR4ACI
Wilmington, N.C. N4WI
Wilmington, N.C. WB4UNG
Fayetteville, N.C. W4LPL
Lexington, Va. WA4WBD
Bridgeport, W.Va. K8VNQ
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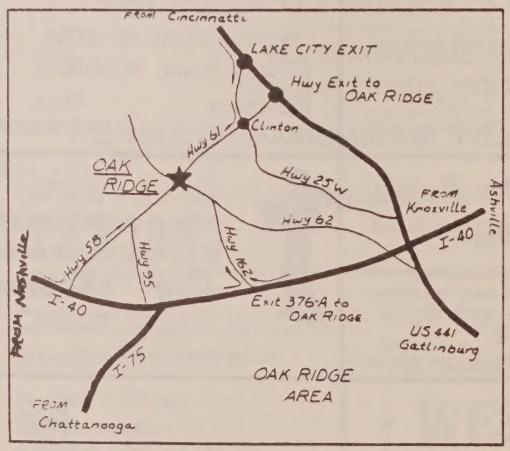

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WHERE'S ALL THE GOOD AUDIO

Continued From Page 1

receiver. To me it's the same logic as a CBer putting a "power mic" on his rig so he can modulate 125%. Turning the modulation up isn't going to make the signal reach out farther. We all know that? Don't we?

Both repeater owners **and** repeater users should be willing to accept the responsibility of insuring that their transmitters are below 6 khz in deviation. I realize that some surplus commercial transmitter strips pass along excess deviation fed into their receiver.

One possibility of limiting incoming or outgoing signals for repeaters lies with techniques used by commercial f.m. broadcast station. They use peak limiters on their signals to avoid excess deviation, knowing that the d.j. in the control room is often going to send audio in excess of 100% on the VU meter back to the transmitter. I know of no commercial broadcast station (I've worked at several in the last 20 years) that doesn't use compressor and limiters on their audio. With the new super processors being put into use in commercial broadcast stations all over the country, there are a number of CBS, Gates, and Thompson peak limiters gathering dust in the back of some storage room.

Wouldn't it be nice to hear a repeater where everyone's output signal—no matter what level the input was—sounded exactly the same volume? Instead of trying to get everyone on the ham bands to set their rigs to exactly 5 khz, it seems to me it would be easier to make them all the same volume as they come through the repeater.

Listen to your favorite f.m. broadcast station sometime, paying particular note to the audio. Chances are you'll find the announcer's voice, the recorded commercials, and the music all exactly the same volume, despite the fact that the announcer in the control room is feeding one, two, or maybe three different levels back to the transmitter.

The 2-meter band is getting crowded. Let's don't get into a deviation/volume war like the boys on Channel 13 with their power mics. And, if your friend comes on the air with a brand new 2-meter rig and his deviation is too "heavy," do him a favor and tell him. F.M. can sound so good!

—Mike Williams, KC4AO Associate Editor

DON'T FORGET SASE

If you expect to be receiving cards via the QSL bureau, don't forget to send a supply of SASE envelopes, with perhaps a couple of extra stamps attached. If you do not have SASE envelopes on file at your respective QSL bureau, you may never see some of those good DX QSLs come back.

The W4/K4/N4 bureau address is: QSL BUREAU, P.O. BOX DX, CHARLOTTE, N.C. 28220.

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Will work with TV-Type Coax connectors on those Used with RG-59 cable.

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(Effective 1-1-82)

INS. FT. 1 BK COVER	(6 x 7½)	$65.00
FULL PAGE	(6 x 7½)	45.00
ONE-HALF PAGE	(6 x 3-3/4)	25.00
ONE-QUARTER PAGE	(2-7/8x3-3/4)	15.00
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CLASSIFIED ADS	(30 words max)	2.25 per ad. (In Advance)
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Contract advertising may be billed quarterly at the request of Advertiser. No volume discounts, or contract discounts are available. For Contract Advertisers, if no new copy is received prior to deadline, your ad will be reinserted as run in previous issue of the JOURNAL.

BUSINESS CARDS, CLASSIFIED ADS AND HAMFEST advertising must be sent accompanied by full payment for insertion. Advertisers who have not paid for advertising prior to deadline, cannot have any advertising inserted until account is paid in full.

The CVRA REPEATER JOURNAL cannot be responsible for errors in advertising, or held accountable for advertising received after published deadlines.

Advertising copy MUST be mailed to: JOURNAL ADVERTISING MANAGER, Ken Holiday, WA4DYY, 1923 Halifax Court, High Point, N.C. 27260

FAREWELL TO OLE 54

After nearly seven years of faithful operation, the WA4TEM repeater formerly WR4AHF disappeared from the odd 146.40-147.54 frequencies.

WR4AHF began operation in November of 1974 on Sharp's Ridge in Knoxville, Tenn. with the announced purpose of providing autopatch service anywhere within the Knoxville city limits to radios of 1 watt or more. In January 1975, Knoxville's first autopatch was born.

Like anything new the autopatch had both its supporters and detractors. A period of trail by fire soon ensued with detractors attempted to jam and abuse the repeater and autopatch. The well monitored WR4AHF doggedly hung on, however, paving the way for other area autopatches.

Over the years since it began, the repeater has been changed and upgraded to reach its present form. Equipped with emergency power, it has been at times the only repeater in the area still on the air after a major storm.

Recently, a new problem developed in the area, the 34-94 K4HXD repeater began having interference problems, due to mixing from the 147.54 output, causing the 34-94 to get keyed up and cause screaching noise.

Both repeaters were checked out and no problems could be found. At the October meeting, owners of the WA4TEM repeater, the Knoxville Repeater Group, Inc., voted to remove their repeater from 147.54 as soon as possible.

Now the machine is on a standard, CVRA-SERA coordinated pair of 144.73-145.33. Since WA4TEM/R is closest to the World's Fair site, the group has offered its services for World's Fair communications.

The club encourages all area amateurs to feel free to use the repeater and autopatch on the new frequency. (Submitted by Robin Rumbolt, WA4TEM)

ADVERTISERS KNOW JOURNAL ADVERTISING PAYS!

Did You Know that it costs less than 1.2 cents* per person to show your full page ad in the REPEATER JOUNRAL. Your ad is also aimed at the regional market around you in the 5-state area.

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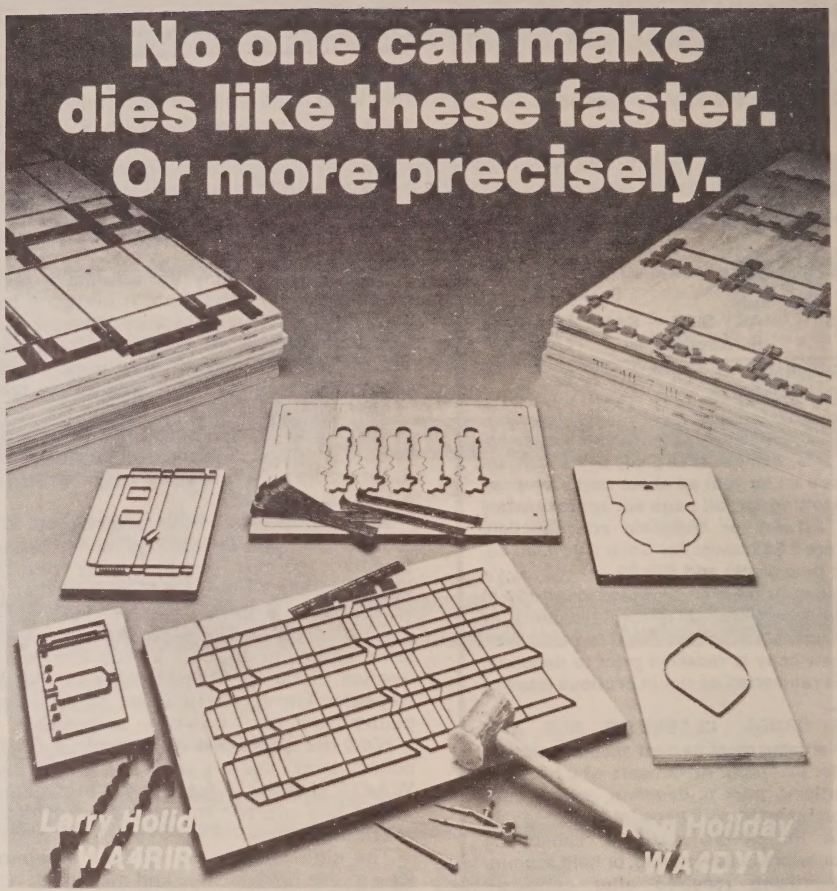
Contact Our Sales Representative: His name and address is on Page 1.



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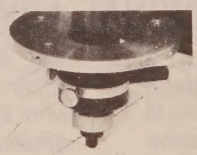

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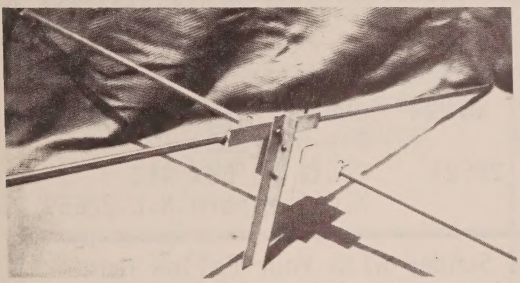
UPDATING THE RINGO RANGER

Continued From Page 11

pieces of aluminum angle stock about 1/2 inch wide, about 1/16 or 1/8 inch thick and 6 or 8 inches long will be needed. The 3 pieces of aluminum angle stock should be joined together to form a cross with a vertical, horizontal, and front-to-back member. When the vertical member is attached to the mast, it will cause the other two members to be in a horizontal plane. Rivets or nuts and bolts can be used to fasten together all touching surfaces.

Old TV antenna elements can be attached to the horizontal aluminum members by using screw type water hose clamps. Screw type hose clamps can also be used to mount the ground plane to the mast. If desired, the radials of the ground plane can be made entirely from aluminum angle stock, but it will have more weight and wind resistance.



Construction of a single ground plane for the basic Ringo Ranger modification. Carlton Moseley began with this configuration on his antenna and it has worked successfully for over a year, he later added the second ground plane.

1982 CALLBOOKS

U.S. CALL BOOK
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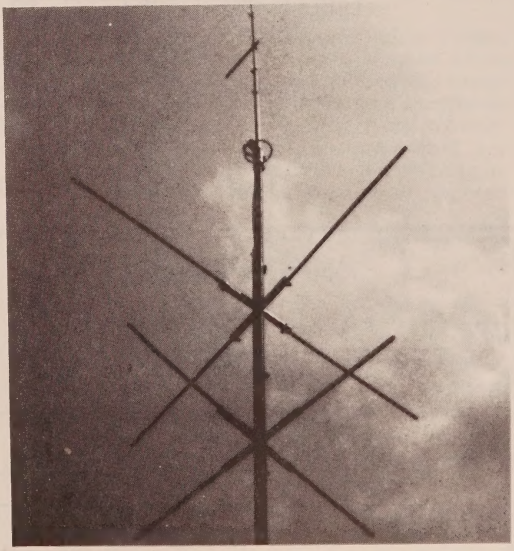
ET CETERA

The Ringo Ranger II, the AEA Isopole, and the Hygain V2 are all recent 5/8 wavelength type colinear antennas that have skirts or chokes to prevent RF current on the supporting mast. The Ringo Ranger II may have slightly greater gain than the other two mentioned above since it gives the equivalent of three 5/8 wavelength elements compared to two 5/8 wavelength elements in the other mentioned antennas.

Claims are made by some manufacturers for the amount of mast decoupling, i.e., how well the supporting mast is shielded from RF current. There is merit in high values of decoupling since it is a value of how well a mast is shielded from an antenna.

If further decoupling is desired for the Ringo Ranger modification discussed in this article, a second ground plane using 4 radials 1/4 wavelength long (20 inches) can be mounted 1/8 wavelength (10 inches) below the first ground plane. About 3 metal straps (hose clamps) should be used to strap the coax to this part of the mast. One clamp should go just below the ground plane and two between the two ground planes. As before, these metal straps are to provide coupling between the coax and the metal mast.



Installation of two ground planes on a Ringer Ranger. The second ground plane was added to give additional isolation between the antenna and the mast.

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CVRA DISTRICT RAMBLINGS

WE PAUSE FOR THIS ANNOUNCEMENT . . . Do you have repeater new or club activities. We cannot print it unless you send it to us. Don't wait for someone else to do the job, it might not make it. Send your club and repeater news to the Journal Editor. Deadlines are April 1, July 1, Oct. 1 and Jan. 1 for our quarterly Repeater Journal (Wayne, K4MOB, Editor)

• • •

MORE CHARLOTTESVILLE, VA.—Long range plans are being discussed for linking some of the Charlottesville repeaters with the Lynchburg/Tobacco Row Mountain repeater such as the very successful Afton Mt./Johnson Mt. (Lynchburg) link. This is still in the discussion stage however. People actively responsible for the recent improvements in the Charlottesville repeater system updates include, Ron, K4RKA, Lewis, WD4DKS, Bill, N4AOP, Lynn, WA4FKX and equipment aid from Don, WD4ALY and Gene, W4IWW. (Ron, K4RKA)

• • •

NEWPORT NEWS, VA.—TWO NEW REPEATERS—The frequency of 765-165 has been coordinated for Cecil, WB4CTF for a repeater to be located at his home. The machine will have the receive antenna at the 115-foot level with transmit antenna below it, with 100-watts e.r.p. . . . The second of two new 2-meter repeaters being constructed for this Tidewater city will operate on the coordinated frequency of 975-375. According to Jerry, WA4OHX, the 24-hour machine will feature microprocessor control and will have an autopatch. Antenna HAAT is 60 feet. (Mike, KC4AO)

• • •

LATE N.C. COORDINATIONS . . . Richard Simerson at Lynwood has coordinated the frequency of 449.50-444.45 for a future repeater in that area.

SMITHFIELD will have a new repeater. William Phillips, KD4YU has been given the frequency of 99-39 for his machine. A new RTTY repeater should be on the air shortly in **ROCKY MOUNT.** KD4PI and N9BEV have coordinated the frequency of 885-255. Cecil and Brian Potter WB4UCF and KA4PBR are planning a new repeater in **MARION.** They have coordinated the frequencies of 855-255. We expect to have more information later on these newly proposed machines. (Ken, WA4BVW)

OBITUARIES

BOB McCREEDY, WB4TTU, 58 died at his home in Arden, N.C. on December 4.

JIM METCALF, N4EIP, 70 died in Asheville, N.C. on October 12.

BANNIE L. STEWART, W4CE, 75, who was instrumental in establishing the ARRL, MARS and QCWA died in December in San Bruno, California. He was well known in South and North Carolina circles of Amateur radio.

ROBERT M. BOOTH, JR., W3PS, died December 3rd following surgery. Booth was former General Council for ARRL.

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CVRA DISTRICT RAMBLINGS

TENNESSEE welcomess new members of CVRA-SERA. **NASHVILLE,** the 19-79 WR4AFA repeater have joined. The GE machine with Phelps-Dodge duplexer and antenna continues to give good coverage in middle Tennessee. **GALLATIN** — Another new member is the WA4YQC, 87-27 repeater. The homebrew machine uses Phelps-Dodge duplexers with Hustler antenna. It has an open autopatch and covers most of middle Tennessee from a ridge overlooking Gallatin and Old Hickory Lake. **GALLATIN** — The WD4KWP 449.45-444.45 machine also joins us for 1982. This machine is a Regency commercial unit, using Motorola Duplexer, 7/8-inch feedline and DB-16 element sky hook. Located on "Music Mountain" the system covers most of middle Tennessee and parts of Kentucky. (Sam, WB4HAP, R.L. WD4BKY and Tom WD4KWP)

• • •

COLUMBIA, S.C. — The N4EOY 07-67 repeater has been moved to a new location just outside Columbia due to a noise problem at the old site. A courtesy beep has been added that resets the timer and allows time for breaking stations. (Al, N4EOY)

• • •

FAYETTEVILLE, TN. — Charles Hill, LO4G has coordinated the frequency of 265-865 for a repeater near the Tennessee Alabama line. The machine will cover Huntsville, Ala., as well as Fayetteville. (Charles KO4G)

• • •

KNOXVILLE, TN. — Progress is being made on constructing the 29.52-29.62 K4HXD repeater. Split site operation is planned with the transmitter on Chilhowee Mt., at 2843-feet AMSL and the receiver 10 miles away on Cove Mt. at 4077-feet. East Tennesseans anxiously await Tennessee's first 10-Meter machine. (George, K4HXD)

• • •

COLUMBIA, S.C. — The Columbia ARC's 96-36 machine will be outfitted with a new microprocessor controller and autopatch by the time you read this. The autopatch will remain open, but will require an access code. Any Columbia ARC member will be glad to assist traveling Amateurs needing a patch when passing through. The Columbia ARC has elected two new members to the Board of Directors. They are Larry Long, KA4RCY and Al Edwards, KB4RL. (Al, N4EOY)

• • •

OAK RIDGE, TN. — The Oak Ridge ARC has installed a local coverage machine on 37-97 carrying the club call, W4SKH. The CVRA-SERA member machine is intended for local autopatch use. The new machine is a Spectrum 1000 and is doing a good job. (Charlie, WB4OBE)

• • •

ANDERSON, S.C. — The Anderson Radio Club has a new Spectrum repeater for 37-97. The new machine is located on the Anderson Memorial Hospital building with emergency power and autopatch. (Al, N4EOY)

CVRA ASSOCIATE MEMBERSHIP

CLIP OR XEROX THIS HANDY APPLICATION AND PASS ON TO A FRIEND TO JOIN CVRA!

NOTE: Membership deadlines are 2 weeks prior to publication month. Applications received after deadline will receive next regularly scheduled Repeater Journal, February, May, August or November.

APPLICATION FROM _____ WHO RECOMMENDED CVRA!

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Name _____ Date _____

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Phone: (____) _____ *Member of ARRL?* ___ *Yes* ___ *Life* ___ *No*

The Repeater I call "home" is: _____ REPEATER CALLSIGN

Enclosed is: $_____ ($3.00/1 yr., $6.00/2 yrs., $9.00/3 yr.)

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RJ 2-82

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12-foot lengths, 19 lbs — IN Stock
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25 ft. Kit — $12.60
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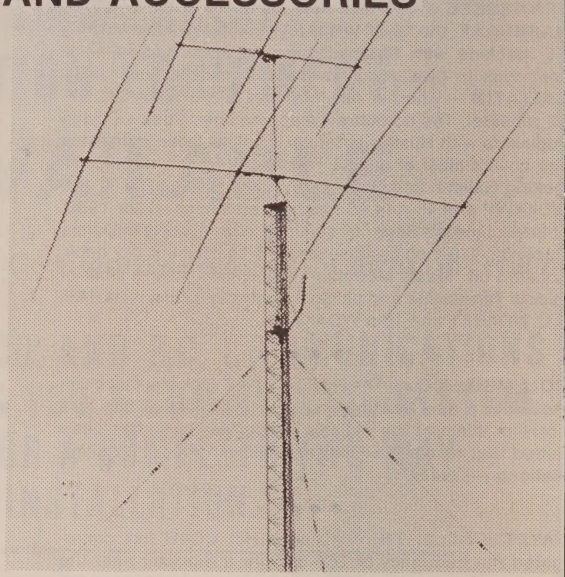

We can also supply ½ and 7/8'' hard line in aluminum or copper. We also have a limited stock of hard line connectors. If we do not have the connectors you need, they can be supplied within approximately ten days.

If you want or need something not listed above, call us, we may have it or can get it for you. All of the above items are standard stock items and we will try to fill your order promptly. We have a limited variety of utility pole hardware and can supply utility poles in the Greensboro, N. C. area only. Call us if you have a problem, we will design a system for you.

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VIRGINIA QSO PARTY

The 1982 Virginia State QSO Party sponsored by the Sterling Park ARC will be held from 1800Z, Saturday 13 March until 0200Z, Monday 15 March. This year there will be 3 categories of participation: **fixed/portable, single transmitter, and mobile. Exchange:** QSO number and QTH (county for VA stations), state, province, or country for others.

Scoring: VA fixed/portable stations – count one point per QSO per band per mode, multiplied by total states, countries, provinces and VA counties worked. **VA mobiles –** count one point per QSO per band per mode per county worked from, multiplied by total states, countries, provinces and VA counties worked. **Others –** Multiply by number of VA counties worked. VA counties determined as per the USA-CA counties list.

Logs and summary sheets mailed to A. Ray Massie, K3RZR, Rt. 1, Box 115E, Dunnsville, Va. 22454, no later than April 15, 1982. Highest VA score will receive plaque, high score in each state will receive certificates.

CHARLOTTE HAMFEST MARCH 20-21

The Mecklenburg ARS announces the 1982 Charlotte Hamfest and Computerfair to be held at the Charlotte Civic Center on March 20-21. The Roanoke Division ARRL Convention will highlight exhibits, forums, demonstrations, meetings, all indoors at the downtown Charlotte, N.C. complex. Major amateur radio manufacturers computer manufacturers and sofeware houses, plus many dealers on hand both days. For brochure and registration information, write: W4BFB, Mecklenburg ARS, 2425 Park Rd., Charlotte, N.C. 28203. (704) 376-4162

ASSOCIATE MEMBERSHIP UP SLIGHTLY

CVRA-SERA Associate Membership 'grew by about 10% during 1981, a modest increase compared to previous years. Most gains were made by new memberships in Tennessee, and West Virginia. North Carolina, South Carolina and Virginia had slight decreases in membership during the past year.

Again this year, CVRA-SERA booths will be manned at most hamfests, to solicit new members and give members a chance to renew without using the mail. Total membership now stands at about 3,350.

SHORT STUFF!

W4@@@ this is K4###, You're noisy into the repeater, can't copy you . . . . . kerchunk. "Justa minute, I'll turn my beams your way" . . . . . kerchunk.

CLASSIFIED

If you have equipment you would like to swap, sell, buy or trade you're invited to send us your want ads. Mail them to our Sales Manager listed on page 1 of the Journal. Ads are not limited to Amateur Radio items.

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OAK RIDGE HAMFEST - Oak Ridge, Tennessee, Civic Center, April 3-4. Dealers, Flea Market, QSO Room, Prizes. Tickets $3.00 Send SASE for more information: ORARC, Jim McNair, N4EXG, Box 291 Oak Ridge, Tn. 37830. (See also full page ad this issue)

• • •

FOR SALE . . . New Regency HR312, 2-meter Transceiver, $180.00. New GSC, 1OR, 10 amp, 12-V. regulated supply, $70.00. No personal checks. Shipped prepaid. LOUIS CRAYCRAFT, K8NUJ, P.O. BOX 118, WILLIAMSON, W.VA. 25661.

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SANTEC FOR '82! It has the time for you. ST-144-mp for 2-meters, ST-440-mp for 440 mhz. See our 2-page ad this issue. WILLIAMS RADIO SALES, COLFAX, N.C.

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SALE: FT-207R, Mint! Includes AC charger, earphone, rubber duck, two (2) nicads, YM-24A microphone, shoulder strap. $300.00 KA4KEG, EARL LASSITER 563 DOWNING DRIVE, DANVILLE, VA. 24541. (804) 793-1066 at 5:00 p.m.

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1982 CVRA-SERA CALENDAR

FEBRUARY

14 ..... Hamfest, FAYETTEVILLE, W.VA.
21 ..... Winter Hamfest, ELKIN, N.C.

MARCH

13-14 ..... Hamfest, ORLANDO, FLA.
20-21 ..... Roa. Div. ARRL Conv., CHARLOTTE, N.C.

APRIL

3-4 ..... Hamfest, OAK RIDGE, TN.
17-18 ..... Miss. State ARRL Conv., JACKSON, MISS.
18 ..... RARS Hamfest, RALEIGH, N.C.
23-25 ..... Dayton Hamvention, DAYTON, OHIO

MAY

1-2 ..... Tri-Cities Hamfest, JC/KINGSPORT, TN.
1-2 ..... Hamfest, GREENVILLE, S.C.
15 ..... DFMA Hamfest, DURHAM, N.C.
15-16 .... Ala. State ARRL Conv., BIRMINGHAM, ALA.
22* ..... Gaston Cty. Hamfest, GASTONIA, N.C.
22-23 ... Roa. Div. ARRL Lea. Plan Meet, RALEIGH, N.C.
22-23 ..... Delta Div ARRL Conv., KNOXVILLE, TN.
30 ..... RVARC Hamfest, ROANOKE, VA.
30 ..... Md. FM Assn. Hamfest, HARMANS, MD.

JUNE

6 ..... Ole Va. Hams Hamfest, MANASSAS, VA.
6* ..... Tri-State ARA, HUNTINGTON, W.VA.
19-20* ..... Atlanta Hamvention, ATLANTA, GA.
26-27 ..... ARRL FIELDDAY

JULY

3-4 ... W.Va. State ARRL Conv., JACKSON'S MILL, W.VA.
17* ..... Summer Swap Fest, CARY, N.C.
23-25 ..... ARRL Nat'l Conv., CEDAR RAPIDS, IOWA
25 ..... TSRAC Hamfest, WHEELING, W.VA.
25 ..... BRATS Hamfest, BALTIMORE, MD.
27* ..... Hamfest, NASHVILLE, TN.

AUGUST

1 .... SVARC Hamfest (Winchester), BERRYVILLE, VA.
1* ..... Jackson Cty ARC Hamfest, RIPLEY, W.VA.
22* ..... East River ARC Hamfest, BLUEFIELD, W.VA.
22 ..... Ill. State ARRL Conv., ST. CHARLES, ILL.
29* ..... Hamfest, MORGANTOWN, W.VA.

SEPTEMBER

4 ..... CVRA Annual Meeting, SHELBY, N.C.
4-5 ..... 25th Anniv. Hamfest, SHELBY, N.C.
12* ..... Hamfest, CINCINNATTI, OHIO
12* ..... Hamfest, GAITHERSBURG, MD.

OCTOBER

3 ..... Hamfest, ROCK HILL, S.C.
3* ..... Hamfest, ROME, GA.
7-9 1983 ..... ARRL Nat'l Conv., HOUSTON, TX.
9-10 .... Va. State ARRL Conv., VIRGINIA BEACH, VA.
10-11* ..... Hamfest, MEMPHIS TN.
17* ..... WCARS Autumnfest, ASHEVILLE, N.C.
23-24 .... Tn. State ARRL Conv., CHATTANOOGA, TN.

NOVEMBER

7* ..... Hamfest, CONCORD, N.C.

WHERE TO BUY DIRECTORY

Amateur Accessories (VA) 5
Amateur Radio Repair Center (NC) 19,30
Bino Communications (NC) 16
Business Card Advertisers 43
Charlotte Hamfest & Computerfair (NC) ... Ins. Ft. Cover
Doc's Communications (TN) 36
Durham Hamfest (NC) 10
Dynamic Engravers (NC) 41
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Raleigh Hamfest (NC) 25
Shelby 25th Anniv. Hamfest (NC) 6
Tri-Cities Hamfest (TN) 4
Two-Way Radio of Carolina (NC) 51
West Antenna Service (NC) 14,42,45,54
Williams Radio Sales (NC) 26-27, 46,49

FINANCIAL REPORT AS OF DECEMBER 30, 1981

REVENUES

Advertising		$ 3,745.70
Associate membership		8,050.96
Full memberships		1,900.00
Other		16.84
		$13,773.50

EXPENDITURES

Journal mailing	$ 1,646.33	
Journal printing	8,333.25	
Miscellaneous expenses	152.42	
Officers and directors	330.61	
Officers supplies and expenses	223.31	
Postage	892.34	
Printing	595.06	
Returned checks	28.25	
Telephone	327.52	12,529.09
EXCESS OF REVENUES OVER EXPENDITURES		$ 1,244.41
Balances January 1, 1981		
Cash in bank	$ 2,433.79	
Expenses advanced McLaurin Barlett	336.71	2,770.50
TOTAL CASH TO ACCOUNT FOR		$ 4,014.91
Less expenses advanced McLaurin/Bartlett		545.99
CASH IN BANK		$ 3,468.92

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